DEPARTMENT OF COMMERCE
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
Budget Estimates, Fiscal Year 2001
President's Budget
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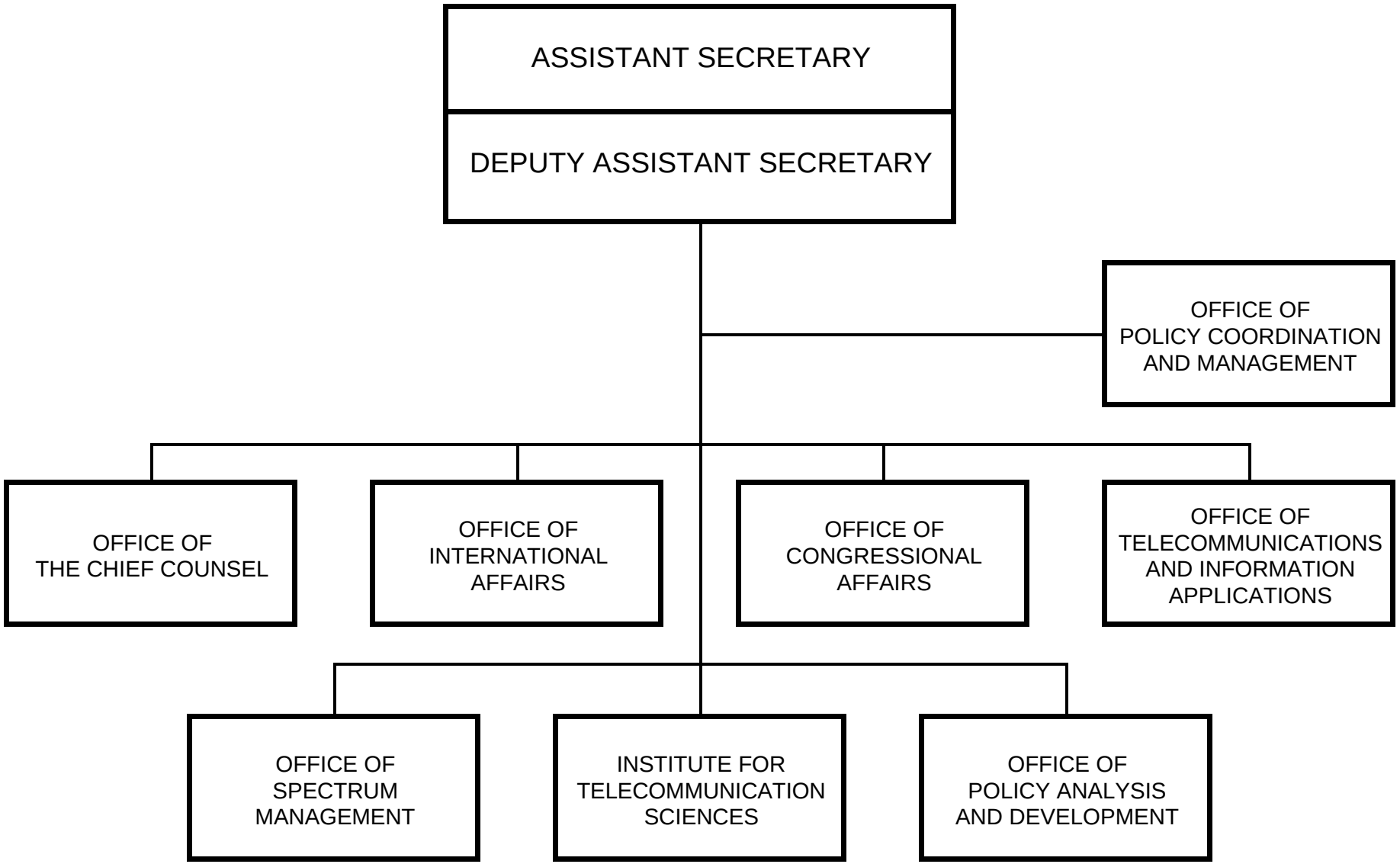
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION



Department of Commerce
National Telecommunications and Information Administration
Fiscal Year 2001 Budget
As Presented to Congress

Executive Summary

The National Telecommunications and Information Administration (NTIA) is responsible for the development of domestic and international telecommunications and information policy for the Executive Branch, for ensuring the efficient and effective use of the Federal radio spectrum, for performing state-of-the-art telecommunications research, engineering, and planning, and for administering the Federal programs that support telecommunications facilities for education, health care, and other social services. NTIA operates within the structure and context of the following goals.

NTIA Strategic Goals

Promote open markets and encourage competition

Ensure spectrum provides the greatest benefit to all people

Advance the public interest in telecommunications, mass media, and information

Promote the availability and sources of advanced telecommunications and information services

The NTIA budget for the fiscal year starting October 1, 2000 of $225.5 million reflects the agency's ongoing commitment to find solutions that will help close the Digital Divide – the gap between those with access to the Internet and information technologies and those without. Much of the focus of the proposed agency budget for the fiscal year will be directed at grant programs and research programs that bring technology into communities as well as to protect the public's spectrum, a critical component of the Nation's infrastructure.

The Digital Divide cluster of programs joins the traditional responsibilities of managing the spectrum for Government users, for helping public broadcasters maintain the best and most up-to-date equipment for their services, and the new responsibilities for helping to protect our Nation's critical information networks.

The Salaries and Expenses budget ($20,315,000) includes funding to maintain ongoing programs as well as to undertake new initiatives: 1) to continue the *Falling Through The Net* statistical survey, part of the Digital Divide cluster; 2) to examine ways to enhance the environment of broadband technology, also part of the Digital Divide cluster; 3) for improvements to the Federal radio spectrum management system that is used

to support the assignment of radio spectrum for all Federal agencies; and 4) to provide base funding for a Critical Infrastructure Program to protect the Nation's telecommunications and information infrastructure against purposeful attack and to participate in an interagency, cross-sector working group for research and development.

Formerly titled the Telecommunications and Information Infrastructure Assistance Program, funded in the Information Infrastructure Grants account, the Technology Opportunities Program (TOP, $45,119,000) will expand to provide matching funds to state, local and tribal governments and non-profit entities to extend the benefit of information technologies to all Americans, especially those in under served communities. Part of the Administration's Communities program and NTIA's Digital Divide cluster, this program demonstrates the viability of innovative systems, the utility of interconnection among existing systems, and the use of advanced information technology in the public and non-profit sectors. The model programs can show how advanced telecommunications and information systems stimulate economic expansion, improve learning at all levels, improve the delivery of health care, strengthen public safety communications, and allow greater access for ordinary citizens to information resources throughout the country. Improvements in these services are especially needed in rural, remote, and economically disadvantaged areas.

To ensure that access to the Internet is an opportunity afforded to all Americans, the Administration proposes the creation of a new program that would provide low-income individuals and families with the connections, training, and support necessary for full participation in today's increasingly online society. A major component of the Communities program, the goal of the Home Internet Access program ($50,000,000) is to bridge the digital divide by providing targeted investments to bring under served populations online. NTIA will build on its experience in supporting demonstration projects in low-income communities (through the Technology Opportunities Program) and in documenting and analyzing the digital divide (through the *Falling Through the Net* series).

In addition, the Administration seeks to continue its program of assisting communities with the digital equipment needed by local public broadcasting organizations. NTIA's Public Telecommunications Facilities, Planning, and Construction program ($110,075,000), in conjunction with the Corporation for Public Broadcasting, is continuing *Public Broadcasting's Digital Conversion*, designed to meet the FCC mandate for digital broadcasting by 2003.

Performance

NTIA's budget proposal contributes to the Department of Commerce efforts to expand economic growth, trade, and prosperity; stimulate innovation for American competitiveness; and advance sustainable economic development. Our efforts contribute to the competitive position of American companies, to the future of our communities, to the efficient use of a "natural resource", our radio spectrum, and to setting the standards that enable e-commerce and other aspects of our digital economy to thrive and grow.

NTIA works with private sector and public officials in government to promote policies that stimulate private investment, create new job opportunities for U.S. citizens, reduce needless regulatory oversight, encourage improved use of radio spectrum, lead to better delivery of social services through telecommunications, provide U.S. leadership in international telecommunications standards-setting forums and trade negotiations, and ensure that the latest technological advances are used to maintain the world's best telecommunications and information infrastructure.

Summary of Resources
(Dollar amounts in thousands)

	Salaries & Expenses		Public Telecom. Facilities, Planning & Construction		Technology Opportunities Program		Home Internet Access	
	Pos.	Amount	Pos.	Amount	Pos.	Amount	Pos.	Amount
FY 2001 base	98	$11,415	13	$26,575	24	$15,619	0	$0
Digital Divide Initiatives:								
Falling Through the Net survey	–	400	–	—	–	—	–	—
Broadband for the Next Generation Internet	10	2,000	–	—	–	—	–	—
Technology Opportunities	–	—	–	—	7	29,500	–	—
Home Internet Access	–	—	–	—	–	—	15	50,000
Critical Infrastructure Protection:								
Lead agency and ISAC	16	3,500	–	—	–	—	–	—
Research	5	2,800	–	—	–	—	–	—
Public Television's Digital Conversion	–	—	11	83,500	–	—	–	—
Spectrum Management System	–	200	–	—	–	—	–	—
FY 2001 request	129	20,315	24	110,075	31	45,119	15	50,000

Department of Commerce
National Telecommunications and Information Administration
Summary of Goals, Objectives, and Performance Measures

DOC THEMES

The Department of Commerce promotes job creation, economic growth, sustainable development, and improved living standards for all Americans, by working partnership with business, universities, communities, and workers. The Commerce mission incorporates three themes:
A - Build for the future and promote U.S. competitiveness in the global marketplace, by strengthening and safeguarding the nation's economic infrastructure;
B - Keep America competitive with cutting-edge science and technology and an unrivaled information base; and,
C - Provide effective management and stewardship of our nation's resources and assets to ensure sustainable economic opportunities.

NTIA STRATEGIC GOALS

#1 - Promote open markets and encourage competition. (DOC Theme A)
#2 - Ensure spectrum provides the greatest benefit to all people. (DOC Theme C)
#3 - Advance the public interest in telecommunications, mass media, and information. (DOC Theme B)
#4 - Promote the availability and sources of advanced telecommunications and information services. (DOC Theme A)

SUMMARY OF NTIA'S GOALS, OBJECTIVES AND PERFORMANCE MEASURES

DOC Theme	NTIA Goals	NTIA Objectives/*Program Support	Performance Measures
A	#1 - Promote open markets and encourage competition.	1.1 Open markets to competition leading to lower prices, increased innovation, and more options for consumers. *Domestic Policy *International Activities 1.2 Increase competitive choices for telecommunications and information services for all consumers. *Domestic Policy 1.3 Advocate a more procompetitive international satellite services market. *International Activities 1.4 Advance U.S. policy and commercial interests in bilateral, regional and international fora. *International Activities 1.5 Assist developing countries in strengthening their telecommunications and information infrastructures. *International Activities	Number of filings, testimony and speeches. FY 2001 OUTPUTS: Pro-competitive U.S. policies, including regulatory policy development and policies related to technology and market convergence. FCC Filings Bilateral, regional, and international fora participation. Programs to assist emerging market countries to build infrastructure. Specific policy guidance to Comsat. FY 2001 OUTCOMES: Increase pro-competitiveness position. Greater consistency between FCC and Executive Branch and increased coordination and consistency of NTIA and Executive Branch policy efforts. Adoption of pro-competitive regulatory reforms by individual U.S. trading partners, regional and international organizations. Continued and enhanced implementation of the WTO Agreement. Progress on infrastructure development in emerging countries. Enhanced competition in international satellite services market. Restructuring of Intelsat and Inmarsat

SUMMARY OF NTIA'S GOALS, OBJECTIVES AND PERFORMANCE MEASURES			
DOC Theme	NTIA Goals	NTIA Objectives/*Program Support	Performance Measures
C	#2 - Ensure spectrum provides the greatest benefit to all people.	2.1 Develop and implement spectrum plans and policies for both government and private sector users. *Spectrum Management 2.2 Satisfy the spectrum needs of Federal government agencies. *Spectrum Management 2.3 Advance development of spectrally efficient technologies. *Spectrum Management *Telecommunications Research 2.4 Improve the management processes of Federal and non-Federal spectrum to maximize the value of spectrum to society. *Spectrum Management *Domestic Policy 2.5 Assessment of risks to communications and information infrastructure from natural phenomena. *Spectrum Management	Number of agency-requested spectrum assignments FY 2001 OUTPUTS: Coordinated long range plans for spectrum use. Necessary revisions to rules and regulations for spectrum use. Certify spectrum availability for approximately 65 agency major radiocommunication systems. Review & coordinate approximately 50 national satellite systems. Authorize Federal agency frequency use by processing approximately 200,000 frequency assignment action requests from the agencies. Innovative way to share spectrum to allow enhanced services and new opportunities FY 2001 OUTCOMES: Resolve spectrum issues, coordinate agency views and establish Federal positions. Satisfy State and Local public safety community's requirements for spectrum. Comply with Balanced Budget Act and provide spectrum for auctioning in support of balancing the budget. Provide a roadmap for spectrum policies leading to satisfaction of future spectrum needs. Satisfy the current and future radiocommunication needs of Federal agencies. Federal agencies need for frequency assignments are satisfied. Enable Licensing
B	#3 - Advance the public interest in telecommunications, mass media, and information.	3.1 Promote universal service and access. *Domestic Policy 3.2 Assist in maintaining and extending the services of public broadcasting and telecommunications facilities, including digital broadcasting applications in the public interest. *Telecommunications Applications 3.3 Promote a diversity of choices and programming sources in the mass media. *Domestic Policy 3.4 Establish principles for the protection of personal privacy. *Domestic Policy 3.5 Work to maintain the U.S. telecommunications and information infrastructure in time of crisis. *Infrastructure Assurance 3.6 Publish FTTN Report *Domestic Policy	Maintain or increase current telephone subscription rates. Increase internet accessibility and use. FY 2001 OUTPUTS: Major Conferences focusing attention on current issues Filings before FCC [various filings] Outreach on universal service programs Wireless Local Loop/Promote Infrastructure Development, Measurement & Testing – CRADA Cooperative Research to test the transmission of high quality voice/data/video WLL technology Reports on current telecommunications issues Monitor effectiveness of self-regulatory privacy regimes. FY 2001 OUTCOMES: Strategies to extend universal service Contributions to the Debate & Solution NTIA participation in major relevant forums, on net publications Wireless Local Loop (WLL): transmission of voice/data/video testing/results/quality measurements/evaluation of WLL technology

SUMMARY OF NTIA'S GOALS, OBJECTIVES AND PERFORMANCE MEASURES			
DOC Theme	NTIA Goals	NTIA Objectives/*Program Support	Performance Measures
A	#4 - Promote the availability and sources of advanced telecommunications and information services.	4.1 Demonstrate advanced, innovative applications of telecommunications and information technology in the non-profit and public sectors. *Telecommunications Applications 4.2 Promote the growth of electronic commerce and Internet use domestically and internationally. *Domestic Policy *International Activities 4.3 Meet the compelling telecommunications research needs of other Federal agencies and industry through cooperative research and development. *Telecommunications Research 4.4 Promote international acceptance of U.S. spectrum proposals. *Spectrum Management 4.5 Participate in ITU and domestic standards development to benefit U.S. industry and user interests. *Telecommunications Research *International Activities 4.6 Develop Next Generation Internet Broadband protocols *Telecommunications Research	Number of models/grants available for non-profit or public sector organizations. FY 2001 OUTPUTS: Models for utilizing the information infrastructure by non-profit or public sector organizations. Competition Grants Management – technical expertise; evaluate "usage" Outreach Models for Applications: Community Networking, Health, Lifelong Learning, and Public Services Public circulation of U.S. proposals for international conferences Final Proposals for and Participation in international conferences Participation in bilateral and multi-lateral conferences. Reports on current telecommunications issues Monitor effectiveness of self-regulatory privacy regimes. NGI Broadband performance measures. FY 2001 OUTCOMES: Increase the number of Americans receiving a Public TV/Radio signal. Non-profits/Public Sector organizations are aware of new technology and models in their fields. Increased numbers of Minorities, Women, underserved groups Models available Every funded model is of NATIONAL interest Greater ITU participation by the private sector. Acceptance of U.S. positions. Report to the President FCC Filing/NTIA paper Private sector Internet coordination. Self-regulation and technological solutions to protect Internet privacy. Continued free flow of data on the Internet. Increased availability of Broadband NGI.

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations
Appropriation available, FY 2000	98	96	$10,953	$11,500
less: Obligations from prior years	0	0	0	(547)
plus: 2001 adjustments to base	0	0	462	462
2001 Base	98	96	11,415	11,415
plus: 2001 program changes	31	31	8,900	8,900
2001 Estimate	129	127	20,315	20,315

Comparison by activity/subactivity		1999 Actual		FY 2000 Currently Available		2001 Base		2001 Estimate		2001 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Domestic and international policies	Pos/BA	37	$4,165	37	$3,719	37	$3,719	37	$4,119	0	$400
	FTE/Obl.	32	4,093	37	3,926	37		37		0	
Spectrum management.....	Pos/BA	24	3,243	24	3,667	24	4,129	40	7,829	16	3,700
	FTE/Obl.	27	3,863	22	4,006	22		38		16	
Telecommunication sciences research.....	Pos/BA	37	3,532	37	3,567	37	3,567	52	8,367	15	4,800
	FTE/Obl.	31	3,531	37	3,568	37		52		15	
TOTALS.....	Pos/BA	98	10,940	98	10,953	98	11,415	129	20,315	31	8,900
	FTE/Obl.	90	11,487	96	11,500	96		127		31	
Adjustments to Obligations:											
Recoveries.....			(249)		0		0		0		0
Unobligated Balance, start of year.....			(845)		(547)		0		0		0
Unobligated balance transferred.....			0		0		0		0		0
Unobligated Balance, end of year.....			547		0		0		0		0
Unobligated balance expiring.....			0		0		0		0		0
Financing from transfers:											
Transfer from other accounts (-).....			0		0		0		0		0
Transfer to other accounts (+).....			0		0		0		0		0
**Appropriation.....			10,940		10,953		11,415		20,315		8,900

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
SUMMARY OF FINANCING
(Dollar amounts in thousands)

Comparison by activity	FY 1999 Actual	FY 2000 Currently Available	FY 2001 Base	FY 2001 Estimate	2001 Increase/ (Decrease)
Total Obligations	**$28,988**	**$31,863**	**$34,826**	**$44,526**	**$9,700**
Offsetting collections from:					
Federal funds	(17,001)	(19,863)	(22,911)	(23,711)	(800)
Non-Federal sources 1/	(500)	(500)	(500)	(500)	0
Recoveries	(249)	0	0	0	0
Unobligated balance, start of year	(845)	(547)	0	0	0
Unobligated balance transferred	0	0	0	0	0
Unobligated balance, end of year	547	0	0	0	0
Unobligated balance expiring	0	0	0	0	0
Budget Authority	**10,940**	**10,953**	**11,415**	**20,315**	**8,900**
Financing:					
Transferred from other accounts (-)	0	0	0	0	0
Transferred to other accounts (+)	0	0	0	0	0
Appropriation	**10,940**	**10,953**	**11,415**	**20,315**	**8,900**

1/ Non-Federal users of the Telecommunications Analysis (T.A) Services program.

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
ADJUSTMENTS TO BASE

Adjustments to Base	Positions	FTE	Amount ($000)
TRANSFER			
Working Capital Fund transfer to GA for Security	0	0	(52)
OTHER COST CHANGES:			
Full-year cost of FY 2000 pay increase and related costs	0	0	96
FY 2001 pay raise	0	0	233
Full-year cost in 2001 of positions financed for part-year in 2000	0	0	0
One less compensable day	0	0	(29)
Within-grade step increases	0	0	71
Civil Service Retirement System (CSRS)	0	0	(1)
Federal Employees Retirement System (FERS)	0	0	1
Federal Insurance Contribution Act (FICA) - OASDI	0	0	6
Health Insurance	0	0	34
Employees' Compensation Fund	0	0	(10)
Travel	0	0	23
Rental payments to GSA	0	0	22
Printing and reproduction	0	0	4
Working Capital Fund	0	0	22
Executive Development and Leadership Training	0	0	25
General Pricing Level Adjustment			
Communications, utilities and miscellaneous charges	0	0	4
Rental Payments to Others	0	0	0
Other services	0	0	7
Supplies and materials	0	0	3
Equipment	0	0	3
Subtotal, Other Changes	0	0	514
Total, Adjustments to Base	0	0	462

Department of Commerce

National Telecommunications and Information Administration

Salaries and Expenses

JUSTIFICATION OF ADJUSTMENTS TO BASE

Adjustments to Base		Positions	FTE	Amount ($000)
TRANSFER				
Departmental Working Capital Fund transfer to General Administration of $52,000 for security costs.		0	0	(52)
COST CHANGES:				
Pay Raises		0	0	329
Full-year cost of FY 2000 pay increase and related costs				
The FY 2000 President's budget assumes a pay raise of 4.4 percent to be effective January 1, 2000.				
Total cost in FY 2001 of FY 2000 pay increase	$319,000			
Less amount funded in FY 2000	(233,000)			
Amount requested in 2001 to provide cost of 2000 pay raise	86,000			
Payment to Working Capital Fund	10,000			
Total, FY 1999 pay raise increase in FY 2001	96,000			
FY 2001 pay increase and related costs				
A general pay raise of 3.7 percent is assumed to be effective January 1, 2001.				
Total cost in FY 2001 pay increase	206,000			
Less amount absorbed in FY 2001	0			
Amount requested in FY 2001 pay increase	206,000			
Payment to Working Capital Fund	27,000			
Total adjustment for FY 2001 pay increase	233,000			
Within-grade step increases		0	0	71
An increase of $71,327 is required to cover the cost of within-grade step increases. This estimate reflects the net cost of step increases which will be earned in FY 2001.				
Estimated number of within-grade step increases	80			
Step increases not earned due to turnover (14.2 x 80)	12			
Average step above step 1 per separation	4			
Average cost per within-grade step increase	$1,896			
Gross cost of scheduled step increases ($1,896 x 80)	152,609			
Less savings due to separations ($1,896x 12 x 4)	(91,008)			
Subtotal, personnel compensation	61,601			
Benefits	9,726			
Total adjustment to base	71,327			

Department of Commerce

National Telecommunications and Information Administration

Salaries and Expenses

JUSTIFICATION OF ADJUSTMENTS TO BASE

Adjustments to Base		Positions	FTE	Amount ($000)
Civil Service Retirement System (CSRS)		0	0	(1)
The number of employees covered by CSRS continues to drop as positions become vacant and are filled by employees who are covered by the Federal Employees' Retirement System (FERS). The estimated percentage of payroll for employees covered by CSRS will drop from 45.5 percent in FY 2000 to 45.4 percent in FY 2001. The contribution rate will remain at 8.5 percent.				
FY 2001 ($6,149,000 x .454 x .0851)	237,569			
FY 2000 ($6,149,000 x .455 x .0851)	238,092			
Total adjustment to base	(523)			
Federal Employees Retirement System (FERS)		0	0	1
The number of employees covered by FERS continues to rise as employees covered by CSRS leave and are replaced by employees covered by FERS. The estimated percentage of payroll for employees covered by FERS will rise from 54.5 percent in FY 2000 to 54.6 percent in FY 2001. The contribution rate will remain 10.7 percent.				
FY 2001 ($6,149,000 x .546 x .107)	359,237			
FY 2000 ($6,149,000 x .545 x .107)	358,579			
Total adjustment to base	658			
Federal Insurance Contribution Act (FICA)		0	0	6
As the percentage of payroll covered by FERS rises, the cost of OASDI contributions will increase. In addition, the maximum salary subject to OASDI tax will rise from $73,275 in FY 2000 to $78,450 in FY 2001. The OASDI tax rate will remain 6.2 percent.				
Regular Employees				
FY 2001 ($6,149,000 x .546 x .957 x .062)	199,205			
FY 2000 ($6,149,000 x .545 x .933 x .062)	193,854			
Increase for FY 2001	5,351			
Other Salaries				
FY 2001 ($280,000 x .546 x .957 x .062)	9,071			
FY 2000 ($280,000 x .545 x .933 x .062)	8,827			
Increase for FY 2001	244			
Total adjustment to base	5,595			
Health Insurance		0	0	34
Effective January 1999, NTIA's contribution to Federal employees' health insurance premiums increased by 11.0 percent. This represents an increase of $33,770 over the FY 2000 estimate of $307,000.				

Department of Commerce

National Telecommunications and Information Administration

Salaries and Expenses

JUSTIFICATION OF ADJUSTMENTS TO BASE

Adjustments to Base	Positions	FTE	Amount ($000)
Employees' Compensation Fund The Employees' Compensation Fund bill for the year ending June 30, 1999 is $10,000 less than the bill for the year ending June 30, 1998. The charges will be reimbursed to the Deparment of Labor pursuant to 5 U.S.C. 8147.	0	0	(10)
One Less Compensable Day The decreased cost of one less compensable day in FY 2001 compared to FY 2000 is calculated by dividing the 2000 estimated personnel compensation ($6,409,000) and applicable benefits ($1,582,000) by 261 compensable days. The decreased cost of one less compensable day is ($28,984).	0	0	(29)
Travel Effective January 1999, the General Services Administration raised per deim rates. This increase resulted in a 9.6 percent increase to NTIA. This percentage was applied to the FY 2000 estimate of $192,000. An additional $5,000 is requested to cover the cost of purchasing airline tickets in contracting with a travel agency under the new travel system.	0	0	23
Rental payments to GSA GSA rates are projected to increase 2.1 percent in FY 2001. This percentage was applied to the FY 2000 estimate of $1,068,000 to arrive at an increase of $22,428.	0	0	22
GPO Printing GPO has provided an estimated rate increase of 3.3 percent. This percentage was applied to the FY 2000 estimate of $130,000 to arrive at an increase of $4,290.	0	0	4
Working Capital Fund An additional amount of $22,000 is required to fund cost increases in the Departmental Working Capital Fund.	0	0	22
Training Consistent with the Department's SES 2000 plan, $5,000 for each currently on-board SES position is provided for executive development and leadership training.	0	0	25
General Pricing Level Adjustment This request applies 1.5 percent based on OMB economic assumptions for FY 2001 to subobject classes where the prices that the Government pays are established through the market system. Factors are applied to other services ($7,000); supplies and materials ($3,000); Equipment ($3,000) and Communications, utilities and misc. charges ($4,000).	0	0	17
Total, Adjustments to Base	0	0	462

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: Salaries and expenses
Subactivity: Domestic and international policies

Comparison by line item		1999 Actual		FY 2000 Currently Available		2001 Base		2001 Estimate		2001 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Domestic and international policies.....	Pos/BA	37	$4,165	37	$3,719	37	$3,719	37	$4,119	0	$400
	FTE/Obl.	32	4,093	37	3,926	37		37		0	
Direct Obligations.....	Pos/BA	37	4,165	37	3,719	37	3,719	37	4,119	0	400
	FTE/Obl.	32	4,093	37	3,926	37		37		0	

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
Domestic and International Policies
Justification of Program and Performance

Goal Statement

NTIA serves as the principal adviser to the President on telecommunications and information policy. In this role, NTIA formulates, advocates and participates in the implementation of policies that further domestic policy goals and enhance the international competitiveness of U.S. telecommunications and information technology, equipment, and services. These policies further the United States' strategic goals of opening markets and encouraging competition; advancing the public interest in telecommunications, mass media, and information services; ensuring that spectrum provides the greatest benefit to all people; and promoting the availability of advanced services around the globe. Policy objectives are based on the identification and interdisciplinary analysis of economic, technological, regulatory, legal, social, and foreign policy issues.

Proposed Legislation

Draft legislation to authorize appropriations for the continuation of this program.

Base Program

Domestic Policies - The telecommunications and information sectors account for about 10 percent of U.S. Gross Domestic Product (GDP), and some experts predict that it will approach 20 percent of our GDP by the year 2004. Thirty-three percent of the GDP growth comes from information technology industries. These sectors comprise a broad range of services and products, including those offered by wired and wireless telephony, broadcast and cable television, the Internet, satellites, and many other means. The Communications Act of 1934, as amended by the Telecommunications Act of 1996 and other enactments, provides a basis for the regulation of many telecommunication and information services and products. Other state and Federal laws also affect the telecommunications and information sectors. Existing laws, regulations, and administrative procedures are subject to enormous pressures created by rapid changes in technology and increased demand for advanced services and equipment. NTIA has the statutory responsibility to serve as the President's principal adviser on telecommunications and information policies as they pertain to the Nation's economic and technological advancement. NTIA's domestic policy activities require it to evaluate constantly the important current telecommunications and information policy issues and identify those that require Executive Branch attention.

NTIA's policy activities support the Department's strategic theme of promoting job creation, economic growth, sustainable development, and improved living standards; and the theme of technological development. NTIA's policy functions advance all four of the agency's goals and particularly those of opening markets and encouraging competition and advancing the public interest. NTIA addresses these policies within the

Administration and to the Congress, the Federal Communications Commission (FCC), state governments, governments of other nations, and ultimately, to the public at large. NTIA's domestic policy activities require it to maintain expertise over all current telecommunications and information policy issues to identify the most important for Executive Branch attention. NTIA makes written recommendations of future courses of action that affect these sectors; it makes recommendations and works with Congress on new or revised laws affecting these sectors; it files detailed written comments to the FCC on specific regulatory proposals; and it reviews a host of issues of interest to the President, Vice President, the Secretary of Commerce, and other officials on an as-needed basis. NTIA also engages in public discussions, meeting with governmental (Federal, state and international) officials and industry representatives. NTIA also facilitates business ownership and participation, including small business and minority participation in these important sectors.

International Policies - The international marketplace for telecommunications continues to grow at a dramatic rate. In 1999, the total global market for telecommunications services is estimated to reach $825 billion annually. Similarly, the market for telecommunications equipment is expected to exceed $200 billion in 1999 and is anticipated to reach approximately $300 billion by 2000. Indeed, it is probable that the growth of e-commerce will accelerate this rate of growth. NTIA continues to formulate and develop policies to enhance the competitiveness of U.S. firms in the telecommunications and information technology (IT) industries.

NTIA develops and implements policies to improve the global competitiveness of the U.S. telecommunications and the information technology (IT) industries. In this capacity, NTIA will undertake actions to enhance growth and expansion of the Global Information Infrastructure (GII) and in its commercial and social uses (electronic commerce and information society). These actions directly support NTIA efforts to open markets and increase competition that, in turn, support the Administration's economic and other policy objectives. While NTIA has principal statutory responsibility for the development and implementation of the United States Government's national and international policy in this area, this activity is undertaken in coordination with the Department of State (DOS) and other Government agencies. NTIA formulates recommendations on U.S. domestic regulation of international telecommunications services for presentation to the Federal Communications Commission (FCC) and others; coordinates Federal Government preparatory activity for international conferences and negotiations related to international radio spectrum utilization, telecommunications standards infrastructure development activities, development of global Electronic Commerce; and advises the DOS on international communications policy. In addition, NTIA supports the trade negotiation activities of the United States Trade Representative (USTR) by providing expert staff to represent U.S. telecommunications and IT interests in those negotiations.

Explanation and Justification

Domestic Policies - The NTIA Organization Act, as amended (47 U.S.C. 901, et. seq.,) requires the Secretary of Commerce to assign to the Assistant Secretary for Communication and Information various functions including the authority to serve as the President’s principal adviser on telecommunications policies pertaining to the Nation’s economic and technological advancement and to the regulation of the telecommunications industry; the authority to provide for the coordination of the telecommunications activities of the Executive branch and assist in the formulation of policies and standards for those activities, including (but not limited to) consideration of inter-operability, privacy, security, spectrum use, and emergency readiness; the authority to develop and set forth telecommunications policies pertaining to the Nation’s economic and technological advancement and to the regulation of the telecommunications industry; and the responsibility to ensure that the views of the Executive branch on telecommunications matters are effectively presented to the FCC and, in coordination with the Office of Management and Budget, to the Congress. The range of domestic telecommunications policy issues is broad and increasingly complex, reflecting the rapid changes in telecommunications technology, its application to the marketplace, and a broadening of the number and types of players. Issues include

traditional common carrier telephony and cable television; the “digital divide” and efforts to maintain universal access to basic and advanced services; Internet growth and the government’s role in access to broadband services; the improvement of radio spectrum management and development of new services; concentration of ownership in the mass media (radio - television) ownership; development of digital television (DTV); and content oriented issues such as privacy, free speech, and political broadcasting. The increasing convergence of telecommunications and information technologies produces novel combinations that challenge accurate prediction. As the formerly disparate telecommunications technologies converge, varied and unique combinations of previously discrete technologies are being created. The convergence of technologies also means the blurring of industry boundaries – previously clearly defined industries that have been regulated by disparate authorities – and the convergence of service offerings. The impact of this convergence on regulatory issues challenges old sensibilities and institutions. The issues for today and tomorrow require NTIA to provide expertise-based leadership and a visionary view of what lies ahead in telecommunications and information. Ideas matter. NTIA’s experts will continue to be at the leading edge of policy analysis regarding ideas and issues confronting and shaping telecommunications and information sectors today and for the future.

NTIA has made contributions to national policy that have long term and tangible benefits to the American people. In FY 1999, for example, President Clinton released NTIA’s study, “Falling Through the Net: Defining the Digital Divide.” Prepared by NTIA using data collected by the Census Bureau, this study reported on access in the United States to telephones, computers and the Internet. This document has become the foundation of debate over the “digital divide.”

In past years as well, NTIA has been a critical part of national telecommunications and information policy development. NTIA made substantial contributions to the passage of the Telecommunications Act of 1996, the most significant change to the Nation's communications law in more than 60 years. On behalf of the Administration, NTIA worked with Congress, the public, and the FCC to enact legislation that, among other things, redefined "universal services” and opening competition among providers from traditionally separate sectors. Following passage of this legislation, NTIA participated in many FCC and state governments proceedings to promote the Administration's priorities regarding implementation of the Telecommunication Act's provisions. These priorities include implementing the definition and funding for universal service, and the development of competition among providers. NTIA more recently worked with the FCC and state governments to develop processes to accomplish the goals of the legislation, and helped form both the sound policy rationales for intricate proposals and crucial support among industry and government decision-makers.

In another example, NTIA's multi-year development and advocacy of a policy to permit the FCC to use competitive bidding in the assignment of radio frequency licenses made possible the first-ever such auctions. These auctions provide a more efficient and faster way for the FCC to choose licensees and ensure that the public is compensated for the commercial use of a public resource.

In FY 2001 NTIA will continue its activities to support the Department’s strategic themes. NTIA intends to articulate policies on a host of issues surrounding new, better and lower priced communications products and services, including the Internet, in order to suggest ways to remove impediments to their growth and vitality and to encourage their availability to all Americans, thus bridging the “digital divide. NTIA will continue to examine policies that affect the ability of U.S. video services -- including existing broadcasting, cable and satellite video services and future services such as digital television (DTV) and "open video service," and digital audio radio services -- to provide diverse and affordable media services to American consumers. NTIA will continue to protect the public interest in the regulation of existing emerging mass media services, ensuring the continued diversity of voices in the media. NTIA will recommend ways to encourage deployment of broadband facilities to all parts of the country which are affordable to all Americans. NTIA will also continue promoting improvements to the current spectrum management

system and to examine what regulatory approaches are needed to make wireless services widely available to the public. NTIA will also continue to provide staff support and expertise to the White House and to respond to requests for technical and policy advice from Congress, other Federal Government officials and the private sector.

NTIA will continue to analyze policies that affect minority participation in telecommunications. NTIA also hopes to continue its programs to enhance minority participation in telecommunications. Specific efforts have included: (1) directing ComTrain, a training program to assist new minority commercial broadcast owners; (2) disseminating information and conducting seminars on ownership opportunities in telecommunications; (3) developing and commenting on legislative and regulatory proposals that promote minority ownership in telecommunications; (4) working with industry, and other Government agencies on initiatives to increase public/private sector assistance to minorities interested in ownership of telecommunications businesses and services; and (5) promoting TELECAP, a study of capital development strategies for minority investment in telecommunications.

International Policies - The Secretary of Commerce is charged by the NTIA Organization Act as amended (47 U.S.C. 901, et. seq.,) with developing and setting forth plans, policies and programs that relate to international telecommunications issues, conferences, and negotiations. The Secretary is also responsible for coordinating economic, technical, operational and related preparations for U.S. participation in international telecommunications conferences and negotiations. Public Law 102-538 requires NTIA to formulate telecommunications and information policy for activities in international organizations such as the International Telecommunication Union (ITU), the Organization of American States Conference on Telecommunications (CITEL), the Organization for Economic Cooperation and Development (OECD), the Asia-Pacific Economic Cooperation Conference (APEC), the Caribbean Telecommunications Council (CTC), the International Telecommunications Satellite Organization (Intelsat), and the International Maritime Satellite Organization (Inmarsat).

The Telecommunications Trade Act of 1988 outlines U.S. policy goals for international telecommunications trade. NTIA assists in implementing the Telecommunications Trade Act, through coordination with the International Trade Administration, USTR and other Government agencies by actively participating in telecommunications talks focusing on select foreign countries in Europe, Asia, and Latin America with significant market opportunities for U.S. providers of telecommunications goods and services as well as in international organizations such as the World Trade Organization (WTO). Within the telecommunications community, NTIA is recognized for its unique capability to blend domestic and international telecommunications and information policy considerations with sound, innovative technological approaches and expertise.

Under the Communications Satellite Act of 1962, the President is charged with overseeing Comsat's participation in the intergovernmental satellite organizations (IGOs) – INTELSAT and Inmarsat. This responsibility has been substantially delegated to the Department of Commerce (and by Departmental Order, to NTIA) acting in coordination with the FCC and the Department of State (DOS). Although Inmarsat's privatization was completed in April 1999, there remain issues to be dealt with regarding that organization's potential access to the U.S. market. In addition, the Communications Satellite Act must be amended to permit United States participation in Inmarsat's residual intergovernmental entity. INTELSAT, meanwhile, has targeted April 2001 as the date for its privatization. Because several INTELSAT participants are resisting privatization, the 2001 date may be delayed. In the meantime, NTIA has been able to reduce its resource commitment to the IGO privatization process.

NTIA works very closely with representatives from the private sector, seeking their advice and counsel to ensure that their concerns are heard in domestically and in international bodies on all matters relating to telecommunications and information policies affecting trade, services, and

procurement. Because of the nature of the telecommunications regulatory environment in the United States, NTIA coordinates its activities closely with the DOS and the FCC, each of which has specific responsibilities defined by laws and executive orders. Coordination is a continual process to ensure that in all international telecommunications deliberations and negotiations, the interests of the U.S. telecommunications and information industries, and the U.S. Government are best advanced.

Statement of Operating Objectives

Domestic Policies - Through its base program in domestic policies, NTIA will formulate and advocate specific legislative, regulatory, technical, strategic, and institutional plans and policies to the President, within the Executive Branch and before the Congress, the FCC, and relevant industries and organizations. Specifically, NTIA's domestic policy objectives are to open markets to greater competition and development of existing and emerging telecommunications and information services and technologies; promote the public interest in telecommunications, the mass media and information services. Issues include universal availability of telecommunications services at affordable rates, (particularly to schools, libraries and hospitals); deployment of broadband services; continued diversity of voices in the mass media; increased minority ownership and operation of telecommunications facilities; development of incentives for innovative, cutting edge, telecommunications and information services and distribution mechanisms while protecting data security and privacy; and development of advanced wireless services using radio spectrum.

International Policies - NTIA possesses expertise in five essential areas:

- technical skill;
- an understanding of the U.S. domestic telecommunications and information technology environment, products, services, policy objectives, and regulations;
- an understanding of U.S. trade objectives;
- an understanding of the international telecommunications and information technology policy and regulatory structure and process;
- an understanding of the contributions that telecommunications and information technology makes to overall economic growth of emerging nations and the related opportunities to increase the competitiveness of U.S. telecommunications firms and of other U.S. firms operating outside the United States.

With this expertise, NTIA develops policy recommendations aimed at improving the competitiveness and market access for U.S. services and equipment. NTIA advocates our national policies before international organizations and in bilateral and multilateral consultations and negotiations.

The objectives for this period can be grouped under topical areas that reflect both the growing importance of telecommunications and information services as a major component of the U.S. trade posture and the rapid advances in technology that are driving telecommunications

and information changes. These objectives are to:

- Facilitate development of the GII and Electronic Commerce. NTIA will provide a forum within the Executive Branch and with foreign governments, as well as international entities, for broad discussions and analysis of U.S. policies and regulations effecting provision of international telecommunications and information technology services and, as well, examine patterns of liberalization internationally to determine how best to enhance the growth of the GII and Electronic Commerce, and the role U.S. suppliers may play in the development of the GII and Electronic Commerce.

- Provide strong leadership to achieve U.S. telecommunications and information policy objectives in international fora, particularly the ITU, the WTO, CITEL/APEC, and the OECD.

- Support initiatives to establish competitive, deregulatory telecommunications and information policies around the world, including the developing nations of Africa, Latin America, China, Eastern Europe, and the Newly Independent States (NIS).

- Preserve the GII as a competitive, market driven environment, free of unnecessary or burdensome regulation in order to promote global Electronic Commerce.

- Support policies to ensure that developing nations share in the economic and social benefits associated with the emerging digital economy and advanced networked communications technology.

- Ensure that the telecommunications and information technology standards setting processes are market driven and do not serve as de facto trade barriers.

- Prepare for and provide U.S. representation in negotiations and consultations to reduce obstacles to the growth of the U.S. telecommunications and information industries.

- Provide policy guidance in the development of procompetitive international satellite communications and other overseas facility operations.

Since publication of the "Framework for Global Electronic Commerce," NTIA has had primary responsibility for implementing important components of the policy, including: the development of effective self-regulation and consumer empowerment technology to screen inappropriate content and to protect personal privacy on the Internet, Internet governance issues including privatizing management of the Internet domain name system (DNS), and policy designed to spread development of advanced network technology and infrastructure.

On Internet governance issues, NTIA conducted two rounds of public comments and produced a final policy statement on management of the domain name system. NTIA will have primary responsibility for implementing this policy, and for securing international support for it. NTIA has participated in formulation and presentation of the Administration's opposition to various proposals to regulate the Internet on a multilateral basis (e.g., the "Bangemann Charter" and various ITU proposals to centralize Internet regulation). NTIA participated in the Transatlantic Business

Dialogue (TABD) conference on E-Commerce, the OECD conference in Turku, Finland on "Dismantling the Barriers to Global Electronic Commerce" and serves on the planning body for the follow-up ministerial conference on E-Commerce to be held in October 1998 in Ottawa. In all cases, NTIA has promoted a non-regulatory approach to Internet governance, led wherever possible, by the private sector.

NTIA has had a lead role in implementation of Administration policy on on-line privacy, producing a discussion paper on the "Elements of Effective Self Regulation," which was discussed and refined at a DOC Privacy Summit in June 1998. NTIA participated in the "Focus on Family Summit" on inappropriate Internet content, and co-sponsored, with the Annenburg Foundation, a conference on developing and accessing high-quality Internet content for education and entertainment.

There is significant work underway to reform the International Telecommunications Union (ITU). NTIA is active in the ITU-2000 planning process which was intended to create the framework for a more timely standardization process and a cost recovery process for radio frequency allocation for satellite systems. As well, the ITU-2000 process sought to strengthen and clarify the role of corporations while maintaining the ITU's essentially intergovernmental character. The ITU's 1998 Plenipotentiary agreed to certain standardization streamlining and on a satellite network cost recovery process. The Plenipotentiary also created a new body, the ITU Reform Committee, to continue examination of options for overall reform of the ITU management and, in particular, the role of corporations in the ITU. The ITU Reform Committee will meet periodically throughout the coming years with the expectation that initial recommendations will be presented to ITU Council in 2001. The ITU Reform Committee will also be confronted with decisions regarding ITU Management's desire to become more involved in Internet policy and regulation.

In FY 1999, NTIA provided support to USTR for activities related to implementation of the telecommunications chapter of the NAFTA, implementation of section #1377 of the 1988 Trade Act and the WTO Agreement on Basic Telecommunications. NTIA will continue to work on implementation of the WTO agreement and assist in monitoring the compliance of countries under the agreement. In particular, NTIA will play a leadership role in assisting developing countries in meeting their obligations under the agreement. As EU policies on telecommunications liberalization are implemented in the 15 Member States, NTIA will continue to monitor EU telecommunications and information policy activities. This activity requires on-going research identifying trends in the international economic and regulatory environment, liaison with U.S. industry groups in the United States and overseas, the preparation of position papers and policy recommendations, and regular participation in interagency and intergovernmental meetings on international telecommunications and information issues. NTIA will continue to promote a non-regulatory approach to Electronic Commerce throughout the world in order to maximize the social and economic benefits on the digital revolution and to ensure continued United States leadership in building the emerging digital economy.

The newly-emerging economies of Eastern Europe, the NIS, China, Latin America and Africa have stimulated demand for resources dedicated to development of the telecommunications and information infrastructure. From the standpoint of the U.S. private sector, infrastructure development is a precondition for most businesses to enter these new markets; for the telecommunications and information technology industries, these infrastructure projects may provide valuable opportunities for direct investment and sales. NTIA has developed a program of activity supporting these nations in their efforts to evaluate development options; to create legislative and regulatory structures to address market needs; and to implement the technical systems required for effective radio spectrum utilization. That program combines policy advocacy and technical and regulatory training programs keyed to the needs and requests of individual nations. During FY 1998, NTIA continued its telecommunications and information infrastructure development programs with greater emphasis on Africa, China and Latin America. In FY 2000, NTIA will conduct its fifth Latin American Telecommunications Summit (LATS). LATS is co-sponsored with the Telecommunications Industry Association and, for three or four days, brings together the Ministers, senior policy staff and procurement officials to conduct high-level policy discussions and to expose these Latin American officials to 30 U.S. telecommunications equipment and/or service providers and their

latest technologies. NTIA conducted a similar program in China -- China American Telecommunications Summit (CATS).

The recent privatization of Inmarsat and the pending privatization of INTELSAT, in conjunction with a recent and dramatic increase in transoceant undersea fiber cable capacity and a corresponding increase in satellite transponder capability has muted some concerns that the IGOs might distort competition by disadvantaging competing private enterprises. NTIA played an important role in the privatization of Inmarsat as well as the creation of private spin-offs from the ITOs (ICO, spun off from Inmarsat and New Skies spun off from INTELSAT). The behavior of the spun off entities and of privatized Inmarsat will be watched closely to ensure full compliance with the procompetitive elements of each firm's organizing documents but, again, the growth of international communications capacity (and the acquisition of the private U.S. satellite firms, PanAmSat, Orion and multinationals) is likely to play a significant role in creating a new, substantially more level playing field in international satellite communications. NTIA will remain heavily involved in the United States efforts for the privatization of INTELSAT. INTELSAT has set

April 2001 as its target date for privatization but many INTELSAT participants are not eager to privatize the sole remaining IGO and may attempt to block privatization or complete privatization with terms unacceptable to the United States.

One of NTIA's most important activities is its involvement with the ITU. The ITU is a specialized United Nations agency and the only international agency exclusively committed to addressing telecommunications and information issues. The ITU membership includes more than 180 nations and more than 500 private corporations, including approximately 155 corporations based in the United States. The ITU has embarked upon a new restructuring effort in an attempt to find a better role for its corporate participants and to become more efficient. The ITU consists of three distinct Bureau – telecommunications, radiocommunications and development. Each of the three Bureaus may issue finding, resolutions and, in certain cases, Treaty commitments that can have a direct bearing on U.S. firms' ability to compete and market its goods and services abroad. In addition, there are indications that the ITU may become far more involved in such matters as policies regarding any potential regulation of the Internet. NTIA will maintain a strong presence in United States preparation for and participation in the numerous ITU meetings.

Department of Commerce
National Telecommunication and Information Administration
Domestic and International Policies
Salaries and Expenses

FY 2001 Budget Initiative

Falling Through the Net: An Annual Assessment of Telephone and Internet Penetration in the United States

Appropriation:	+$400 thousand	Permanent Pos.	0	FTEs:	0
Reimbursable:	0	Permanent Pos.	0	FTEs:	0

To provide permanent funding for an analysis of the nature and extent of Americans' access to the National Information Infrastructure.

Universal and affordable access to telecommunications services is one of the top priorities of this Administration. Speaking about the global economic promise of the Internet and the Information Superhighway, Vice President Gore quoted the writer Cervantes, who said "There are only two families in the world, the Haves and Have-Nots." The Vice President called American history a constant battle against this division. Consistent with this concern, one of the major goals of the Clinton-Gore Administration has been to extend the "universal service" concept to ensure that information resources are available to all at affordable prices.

In July, 1999, President Clinton and Secretary Daley released *Falling Through the Net III: Defining the Digital Divide.* The reports in this series are a principal foundation and justification for the Administration's telecommunications policies. They provide a solid empirical foundation for policymakers and others throughout government and the private sector. As the United States takes steps to close the digital divide, there needs to be a measure of our progress. These *Falling Through the Net* reports provide such a measure. The data collected in *Falling Through the Net* is an important metric that helps gauge the extent to which Americans are universally able to access the fruits of the Information Age.

The studies' results have contributed significantly to the universal service debate. President Clinton, for example, quoted the findings of *Falling Through the Net II* in a speech given in March, 1999. The study has spawned similar analyses by others, often focusing on particular disadvantaged groups. Other countries, such as Canada, have duplicated the methodology in seeking to uncover their own penetration patterns.

NTIA designed and developed the original *Falling Through the Net* analysis in 1995 to determine the extent to which Americans possessed telephones and on-line computer access. Both the original and its sequels use Current Population Survey data from the Commerce Department's Bureau of the Census as the basis of analysis. These reports provide in-depth insights into the extent of such access in U.S. households today and its recent trend, helping to create a vision for national telecommunications policy. The *Falling Through the Net* reports revealed that

households who do not have phones and/or on-line access are disproportionately low-income, minorities, young or old, less-educated, mobile, and located in central cities or rural areas. The studies revealed data and trends that have contributed significantly to the universal service debate. Some findings were a surprise. For instance, the study determined that many of the groups that are most disadvantaged in terms of computer and modem penetration are the most enthusiastic users of on-line services that facilitate economic uplift and empowerment. In April, 1998, the Vice President called on the Department of Commerce and NTIA to produce a new study of this "digital divide." NTIA's analysis, published in the summer of 1998 under the title *Falling Through the Net II*, was a thorough analysis of trends in Internet, computer and telephone penetration and usage among all segments of society. NTIA's third iteration in this series *Falling Through the Net III*: *Defining the Digital Divide* is widely recognized as the most complete and reliable source of information on these issues.

Given the extensive, positive reaction to the first two ad-hoc studies, there is a strong demand for keeping the study results current. Accordingly, a permanent source of funds is required to establish an ongoing, annual product. Internet statistics quickly become dated, necessitating a detailed periodic survey by the Census Bureau that will provide the current data and allow for time-series analyses. Moreover, an ongoing survey would likely include additional categories of data, such as information on "churn" (turnover), future plans, and types of connections and services.

NTIA will design and produce updates of the *Falling Through the Net* on an annual basis. Preparations will include working with the Census Bureau under a reimbursable agreement to design surveys that will provide the information needed for an analysis of these issues, and assessing the data received, using Census Bureau expertise where appropriate.

Performance

A comprehensive study of the connectivity of Americans to basic and advanced telecommunication and information services will provide government and business policy-makers with better tools for making sound decisions.

Exhibit 15

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: Domestic and International Policies
Program Change: Falling Through the Net: An Annual Assessment of Telephone and Internet Penetration in the United States

Object Class		2001 Increase
11	Personnel compensation	
11.1	Full-time permanent	0
11.3	Other than full-time permanent	
11.5	Other personnel compensation	
11.9	Total personnel compensation	0
12.1	Civilian personnel Benefits	0
21	Travel and transportation of persons	0
22	Transportation of things	0
23.1	Rental payments to GSA	0
23.2	Rental payments to others	0
23.3	Communications, utilities and misc charges	0
24	Printing and reproduction	0
25.1	Consulting Services	0
25.2	Other Services	0
25.3	Purchase of goods & services from Gov't accounts	400
25.7	Operation and maintenance of equipment	0
26	Supplies and materials	0
31	Equipment	0
99	**Total obligations**	400

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: Salaries and expenses
Subactivity: Spectrum management

Comparison by line item		1999 Actual		FY 2000 Currently Available		2001 Base		2001 Estimate		2001 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Spectrum management	Pos/BA	24	$3,243	24	$3,667	24	$4,129	24	$4,329	0	$200
	FTE/Obl.	25	3,581	19	3,706	22		22		0	
Critical infrastructure protection	Pos/BA	0	0	0	0	0	0	16	3,500	16	3,500
	FTE/Obl.	2	282	3	300	0		16		16	
Direct Obligations	Pos/BA	24	3,243	24	3,667	24	4,129	40	7,829	16	3,700
	FTE/Obl.	27	3,863	22	4,006	22		38		16	

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
Spectrum Management
Justification of Program and Performance

Goal Statement

The goals of this activity are to formulate and establish plans and policies that ensure the effective, efficient, and equitable use of the spectrum both nationally and internationally; to develop long range spectrum plans to meet future Federal government spectrum requirements including public safety; to develop plans for managing radio communications during emergencies; to provide public access to spectrum management information; to coordinate and register Federal government satellite networks internationally; to satisfy the frequency assignment needs of the Federal agencies; to provide spectrum certification for new Federal agency radiocommunication systems; to perform the necessary engineering analysis for evaluating and planning spectrum use; and to provide the necessary automated data processing (ADP) capability to perform the above with a high degree of quality and timeliness. The objectives of this activity are to:

Spectrum Plans and Policies

- Formulate and advocate plans and policies for the effective and efficient use of the spectrum by the Federal Government, and ensure the public safety needs of the Nation are adequately addressed.
- Provide leadership, liaison, and guidance for the integration of National Public Safety telecommunications systems, ensuring inter-operability among Federal, state, and local public safety agencies. Provide for the spectrum needs of these integrated systems, ensuring growth into the next century.
- Coordinate, develop and present the Government's contribution to U.S. proposals and positions for international radio communications treaty conferences, and International Telecommunication Union (ITU) administrative, policy, and technical fora.
- Analyze other country proposals to international radio conferences and other ITU fora, to determine the impact on U.S. spectrum requirements.
- Participate in bilateral and multilateral meetings on spectrum management issues with foreign administrations.
- Implement the results of international radio treaty conferences.
- Initiate and conduct scientific and technical cooperation in the field of telecommunications and spectrum management with specific foreign countries in accordance with U.S. foreign and international trade policy objectives.
- Conduct spectrum training courses and seminars for U.S. and foreign spectrum managers.
- Review Federal space systems for compliance with national requirements, coordinate with other Federal and non-government radiocommunication systems, and participate in satellite coordination meetings with other administrations.
- Coordinate non-government space systems with Federal Government radiocommunication systems.
- Develop emergency/wartime and long-range plans for use of the spectrum.
- Develop procedures and incorporate them in the planning process for a timely and orderly transition from normal to emergency modes.
- Participate with other Federal agencies in communications emergency readiness planning and implementation.

- Formulate and advocate plans and policies necessary in the development of strategies to improve and restore U.S. telecommunications resources.
- Provide strategic national-level spectrum planning to promote effective and efficient spectrum use so that both near-term and long-range spectrum needs of the Federal Government and the private sector can be met.
- Prepare and implement the necessary plans to improve the spectrum management process through the use of advanced data processing techniques.
- Investigate and implement advanced technologies for management of the spectrum to increase its effectiveness and efficiency of use by the Federal Government agencies thereby maximizing spectrum availability for new technologies in the private and public sectors.
- Continue private sector participation in spectrum management and planning efforts.

Frequency Assignment and Interdepartment Radio Advisory Committee (IRAC)

- Provide Federal agencies with accurate spectrum management data;
- Process Federal agencies' requests for frequency assignment authorizations and actions;
- Assist non-IRAC agencies in identifying spectrum to meet their radiocommunications needs;
- Provide the necessary administrative support for the IRAC, its subcommittees, and ad hoc groups that provide NTIA advice on spectrum issues and problems;
- Develop and update the Federal government rules and regulations necessary to manage the Federal government's use of the spectrum.

Spectrum Engineering and Analysis

- Sciences Research activity to support spectrum planning, spectrum resource planning assessments, spectrum sharing Develop plans for intraservice and interservice sharing in selected bands;
- Evaluate proposed Federal telecommunications systems for certification for spectrum support in accordance with OMB Circular A-11;
- Resolve conflicting requirements concerning Federal agencies' use of the spectrum;
- Plan and coordinate spectrum measurements in selected frequency bands which are conducted under the Telecommunication ng and compatibility analyses, and compliance with standards and authorized spectrum usage;
- Provide technical engineering and policy analysis support in preparation for and participation at international radio treaty conferences and in the development of domestic spectrum policy and long-range planning;

Computer Services

- Operate a range of computer (client-server) systems and networks that provide interoffice communications, the means to process frequency assignment requests, and public access to a growing collection of electronically available spectrum management information;
- Develop and improve engineering and analysis models and tools to support spectrum engineering and analysis and the spectrum authorization processes;
- Develop, modify and implement software that is necessary to operate the spectrum authorization processes, to provide the Federal agencies the computer automated capability to manage their frequency spectrum assets, and to provide the spectrum management community the necessary spectrum information (e.g. the Government Master File) that will enable the Federal agencies to manage their spectrum assets without interference and within the current rules and regulations.

Proposed Legislation

Legislation to authorize appropriations for the continuation of this program.

Base Program

Explanation and Justification

Spectrum Plans and Policies

As part of its role in establishing Federal spectrum management policy, NTIA allocates and assigns the radio frequency spectrum to Federal users. This responsibility includes chairing the Interdepartment Radio Advisory Committee (IRAC), its major subcommittees and various specialized ad hoc groups. The IRAC, which is a committee composed of the representatives of 20 Federal agencies and an FCC liaison, is the primary Executive Branch adviser to NTIA on Federal agency spectrum management. Through the Spectrum Planning, Technical, Radiocommunication Conference, Emergency Planning and Frequency Assignment subcommittees as well as numerous ad hoc groups, the IRAC advises NTIA on spectrum policy and procedural matters, develops Federal positions on international radio treaty conferences, and provides recommendations for conflict resolution.

With respect to national spectrum concerns, NTIA, in conjunction with the FCC, formulates long-range spectrum allocation plans that respond to the changing requirements of both Government and non-Government services. Spectrum planning is also conducted relative to wartime and emergency conditions.

In recognition of the importance of public safety services to the American public and the importance of spectrum to these activities, NTIA will provide the necessary leadership, technical expertise, applied research, policy guidance, and spectrum management support for the successful coordination of national public safety requirements, goals and objectives both within the Federal Government and the state and local entities and in coordination with the FCC. NTIA will address and support the needs of: (1) the National Performance Review/Access America's Public Safety Wireless Network Program; (2) a follow-on program (National Public Safety Telecommunications Council) to the Public Safety Wireless Advisory Committee (PSWAC) to further address PSWAC recommendations including satisfying future spectrum needs; (3) inter-operability between Federal, state and local emergency entities; (4) national and international public safety standards; (5) new technology evaluation and testing; and (6) funding assistance (if available) for state and local agencies to adopt new technology. Consideration will also be given to shared and joint use plans, use of standard radio systems, and coordination processes.

In its international spectrum management role, NTIA participates with the FCC and the State Department in preparing for diverse international radio treaty conferences, negotiations and forums on spectrum management, allocations, technical standards and regulation. Specifically, NTIA coordinates and develops the Federal Government's contributions to the U.S. proposals for these treaty conferences and forums and helps prepare the preliminary and final U.S. positions. In many cases, NTIA representatives chair the national preparatory groups for these fora. Also, these representatives are often called on to chair or organize activities on an international level on behalf of the ITU. NTIA analyzes the known

intentions and positions of other nations to determine whether U.S. counter-proposals are necessary. NTIA also participates in bilateral negotiations and provides members for the U.S. delegation for radio treaty conferences and other ITU administrative, policy and technical fora. In addition, NTIA works toward building confidence worldwide in U.S. spectrum planning techniques to win support for U.S. positions and participates in the negotiations and forums themselves.

NTIA plays a central role in developing and promoting policy and guidance to improve the Government's emergency communications response posture and the protection of information during electronic transmission or processing.

Frequency Assignment and IRAC

NTIA reviews, processes, and authorizes Federal radio frequency assignments. In Fiscal Year 2000 and 2001, we expect to process approximately 200,000 requests. NTIA also reviews each frequency assignment action to determine the degree of compliance with authorized use and will continue its reviews of Federal frequency assignments to evaluate the validity of current needs. This frequency assignment responsibility involves chairing the IRAC Frequency Assignment Subcommittee (FAS) as well as directing that Subcommittee's activities and providing its administrative support.

The assignment responsibility also involves ensuring that the spectrum needs of certain Government agencies not represented on the IRAC, the United Nations and foreign embassies are met. NTIA maintains and updates files and records for radio spectrum management. The computerized files include: the Government Master File of Frequency Assignments (GMF); portions of the FCC frequency records necessary for use in Federal spectrum management, especially the management of shared Government/non-Government frequency bands; frequency allocation records; terrain elevation data; and Federal systems review data. NTIA has authorized some 53 Federal agencies, non-government entities (in coordination with the FCC), and foreign governments (Canada and Mexico) a total of approximately 437,000 as of the end of FY 1999. These diverse files and records provide varied information and publications for NTIA's staff as well as the rest of the spectrum management community. They are also used in the Canada and Mexico spectrum coordination processes with the Federal agencies. The information provided will be used by Federal agencies in proposing frequency assignments and by NTIA personnel in analyzing potential and spectrum sharing interference problems. Also within the spectrum management activity, the NTIA Manual of Regulations & Procedures for Federal Radio Frequency Management governing the Federal spectrum will be updated and administrative support will be provided to the IRAC, the Spectrum Planning Subcommittee (SPS), the Technical Subcommittee, the Radio Conference Subcommittee (RCS), the Emergency Planning Subcommittee (EPS), and the IRAC ad hoc groups.

Spectrum Engineering and Analysis

NTIA conducts in-depth analyses of spectrum use, technically reviews new Federal radiocommunication systems, including space systems; assists Federal agencies in resolving operational problems; provides technical engineering/policy analysis support for international radio treaty conferences; establishes and improves Federal standards to assure efficient use of the spectrum. The in-depth studies evaluate the effect of existing and planned radiocommunication systems on the radio frequency spectrum and provide technical engineering support for domestic and international policy development and long range planning. These technical/policy analyses will be of two types, the first focusing on the selected portions of the radio frequency spectrum and the second focusing on particular types of uses of the spectrum. Both types of studies will examine

present and planned equipment usage to determine if the spectrum is efficiently and effectively used, the potential for compatible sharing of Federal radio services, and the effects of proposed and planned national and international allocation changes on the ability of Federal agencies to complete their mandated missions. NTIA will also investigate the possibility of increased sharing of spectrum resources between Federal and non-Federal radiocommunication systems in order to increase the efficient use of the spectrum within the United States. Results from field and laboratory measurements will aid in the evaluation of frequency utilization, policy compliance, new technologies, and radio frequency interference.

NTIA will continue its system reviews of proposed Federal radiocommunication systems for compliance with Federal regulations and for compatibility with other present and planned systems; and its space system reviews of proposed Federal space systems for coordination requirements with foreign countries and proposed foreign space systems for assessment of compatibility with Federal telecommunication systems. After completion of a preliminary system review, NTIA, with the advice of the Spectrum Planning Subcommittee of the IRAC, provides or denies certification of spectrum support for the system or indicates what changes are required in the system before certification can be provided. System reviews are done at the conceptual, experimental, developmental, and preproduction stages of a given system's procurement cycle, as required by OMB Circular A-11. In Fiscal Year 1999, NTIA conducted 62 system reviews. The 62 radiocommunications systems cost was estimated at $10 billion. In Fiscal Years 2000 and 2001, we anticipate conducting 65 system reviews each year.

NTIA will resolve operational conflicts that arise between Federal agencies regarding the use of the spectrum and coordinate the process of meeting spectrum requirements that cannot be satisfied within existing policies and procedures. These operational problems are detected through NTIA studies or brought to the attention of NTIA by other agencies. Solving such problems demands analyses of the effects that proposed changes in frequency assignments, operational procedures, or equipment will have on the electromagnetic environment as well as consideration of the various tradeoffs between technical and operational factors. NTIA will provide solutions to operational problems involving incompatibility between systems. In support of international spectrum management, NTIA will continue to provide engineering analyses on technical issues necessary to support U.S. participation in and preparation for international conferences and meetings.

Extensive radio regulations have been developed, both nationally and internationally, to ensure that various radio services can operate compatibly in the same environment without unacceptable levels of radio interference. These regulations are focused primarily on radio systems utilizing the same allocated bands of frequencies. Recent years have seen a dramatic increase in the number of problems and spectrum issues involving adjacent band interference (i.e., interference from a transmitter operating in one band to a receiver operating in an adjacent allocated band). In the national and international marketplace, adjacent band problems are beginning to surface as the search goes on to identify spectrum for an ever-expanding number of new and innovative radio-based telecommunication services. Billions of dollars of investment are contingent on the availability of spectrum where in-band and adjacent band interference concerns are resolved either through proper coordination or by effective equipment designs through the use of technologies. Within this environment of increased spectrum requirements and new and innovative radio communication systems, the single most challenging issue is the question of how to address the adjacent band interference problem and apply the latest technologies. It is particularly challenging because it involves the effects of adjacent band emission from transmitters and the characteristics of the adjacent band receiving equipment and its interference susceptibility to unwanted signals. The issue of adjacent band receiver susceptibility is particularly challenging because receivers by tradition have not been subject to standards and cost factors that have led to interference prone designs. The key to success in reducing receiver susceptibility is to develop a technical and regulatory framework that maintains flexibility while meeting the overall goal of effective and efficient national and international spectrum management. NTIA has undertaken a comprehensive examination of adjacent band and man-made interference, including technical and regulatory issues, and

make appropriate recommendations. While a number of the above individual issues and questions have been examined in depth by NTIA and others, a more comprehensive examination of the overall issue will be undertaken. NTIA will explore these and other identified issues and will develop appropriate recommendations.

When completed, a data base will be developed of the allocated frequency bands wherein the projected energy levels in the adjacent bands and other man-made noise would be estimated. Based on these estimates, bands would be prioritized as to urgency and magnitude of the problem and make recommendations as to setting transmitter or receiver spectrum standards among other possible solutions. In addition, algorithms will be developed that use these adjacent band levels and options included the Joint Spectrum Management System (JSMS) and the follow-on to JSMS, Spectrum XXI, used by Federal agencies to consider this information. Short term and longer range solutions at both the national and international level will be pursued.

New technologies can be used to increase the efficiency with which the Government and private sectors use the radio spectrum making more spectrum available, in effect, for other applications. The potential increases in spectrum efficiency will be evaluated for a number of technologies including sectorized and adaptive antennas, spectrum sharing etiquettes, software driven radios, and other means of spectrum sharing. The technologies will be prioritized based on their potential, for increasing spectrum efficiency. The performance limitations of the highest priority technologies will be measured and tested for several generic applications. This will enable the investigation of the usefulness of these technologies for Government applications. Of primary concern is the ability of Government systems to meet mission and performance requirements when using these new technologies. In the out-years, NTIA will focus on a longer term effort of evaluating the Governments use of the spectrum on an allocated band basis and the use of new spectrum efficient technologies that are appropriate for government applications. The outcome of this investigation would be a series of annual reports of their findings including plans for the Federal Government to implement promising technologies. These plans would be coordinated with the Federal agencies after which implementation strategies would be developed.

Computer Services

NTIA will continue to provide the information technology necessary to review, process, and authorize Federal radio frequency assignments and necessary to maintain spectrum management databases. Existing automated systems will be enhanced and new automated systems will be developed, as required, to improve the timeliness, efficiency, and effectiveness of the frequency assignment authorization process. NTIA's goal is to ensure that Federal agencies have access to accurate spectrum management data, that Federal agencies have the information technology tools necessary to use that data to create frequency assignments that comply with Federal regulations and procedures for using the radio frequency spectrum, and that NTIA has the information technology required to effectively process agency requests for frequency assignment authorizations in a timely manner.

In order to conduct its various reviews and analyses, NTIA continuously reviews its automated analytical capability to ensure the methods of problem solving are appropriate for new communication systems and for state-of-the-art changes in telecommunications technology. NTIA develops and enhances analytical computer programs that permit rapid computation of potential interference between existing and proposed communications systems. These computer programs must often be tailored to meet the requirements of specific problems. NTIA maintains and enhances local area networks and uses the Internet to support spectrum management activities. NTIA's unclassified local area network supports traditional office automation activities such as e-mail and word processing. A classified local area network provides the NTIA staff with access to

the computers that process frequency assignment actions. Internet servers provide spectrum management information on NTIA's World Wide

Web pages. Listservs provide a means for electronic conferences.

Statement of Operating Objectives

Spectrum Plans and Policies

NTIA will continue to: direct and support the IRAC and its representative subcommittees, both administratively and technically; resolve spectrum management problems between the Federal agencies and other domestic and foreign entities; negotiate with personnel in foreign administrations in support of U.S. goals at international conferences and other ITU fora; develop and modify spectrum policies and procedures for crisis-related situations; conduct long-range strategic Federal and private sector spectrum planning in coordination with the FCC; prepare for and participate in the ITU Radiocommunication Sector (ITU-R) Study Groups' activities; provide emergency readiness planning for the Federal use of the radio frequency spectrum; chair and direct the activities of the Spectrum Planning and Policy Advisory Committee (SPAC); continue spectrum management training activities including support for the U.S. Telecommunications Training Institute (USTTI); formulate policies, issue and revise allocations and regulations concerning Federal spectrum use; identify and provide solutions to issues and deficiencies in the emergency communications planning process in support of the National Communications System (NCS); prepare and implement plans to improve the efficiency and effectiveness of the Federal Government's spectrum management process using current ADP technology; promote and address the public safety community spectrum needs in coordination with the FCC; continue to prepare long range plans based on identification of projected spectrum requirements; and provide the public access to release-able spectrum management information (Federal agency spectrum use, proposed policy changes, and policy decisions) through NTIA's Center for Spectrum Management Information; and provide the necessary leadership, technical expertise, applied research, policy guidance, and spectrum management support for the successful coordination of national public safety requirements, goals and objectives both within the Federal Government and the state and local entities and in coordination with the FCC.

Frequency Assignment and the IRAC

NTIA will: (1) process and authorize frequency assignment actions to ensure interference-free operations to Federal stations; (2) maintain and update spectrum management data bases; (3) issue changes to regulations/allocations; (4) continue to provide administrative support for the IRAC, its subcommittees, and its Ad Hoc groups; and (5) continue to improve and upgrade the electronic archive of the IRAC and distribute it periodically to the NTIA staff and Federal agencies.

Spectrum Engineering and Analysis

NTIA will: (1) assess the present and projected Federal use of the spectrum by conducting in depth studies of spectrum use (concentrating on bands and services supporting upcoming international conferences and those where significant improvements in utilization appear possible); (2) resolve operational problems concerning interagency conflicts in the use of the radio frequency spectrum that cannot be satisfied within existing policies and procedures by evaluating tradeoffs between technical and operational factors; (4) evaluate proposed Federal systems to determine compatibility with present and other proposed systems, adherence to regulations and availability analysis (resulting in approval with changes in the frequency band, operational procedures or system design, or disapproval); (5) provide technical support to the IRAC and its subcommittees associated with the preparation and participation in international radio treaty conferences and RS technical standards groups; (6) undertake a comprehensive examination of adjacent band and man-made interference, including technical and regulatory issues, and make appropriate

recommendations; and (7) evaluate a number of technologies to determine their potential spectrum efficiency and their usefulness for Government applications.

Computer Services

NTIA will: (1) continue to maintain and update existing computer software used for processing assignments, data bases, and interference calculations; (2) continue to design or implement new software packages to further improve assignment data processing and analytical engineering evaluation; and (3) develop new automated systems to improve access to spectrum management information.

To participate effectively in a national planning process, NTIA must have a clear understanding of how the spectrum is used in all sectors of the United States and be able to apply this knowledge to determine how to satisfy both the private sector and Federal Government requirements for spectrum. NTIA manages the Federal Government agencies' use of the spectrum. NTIA maintains a data base of information that shows the authorizations that have been made and the responsible agency. NTIA also has capabilities to analyze and apply this information to ensure radiocommunication operation without harmful interference. Many of these capabilities are computer automated.

Department of Commerce
National Telecommunication and Information Administration
Spectrum Management
Salaries and Expenses

FY 2001 Budget Initiative
Spectrum Management System Improvements

Appropriation:	+ $0.2 million	Permanent Pos.	0	FTEs:	0
Reimbursable:	+ 0.8 million	Permanent Pos.	0	FTEs:	0

Spectrum Management System Improvements will provide effective and efficient use of Federal spectrum allocations. The Department of Commerce is the manager of the spectrum allocated and used for all Federal operations. Federal agencies use spectrum in the execution of their missions to provide national security, safety (such as in air traffic control), protection (law enforcement), and other public services. NTIA must also ensure that the Federal Government uses the minimum amount of spectrum to do its job; which maximizes the spectrum available for the private sector to meet future national spectrum needs.

This initiative will enhance technology development and commercialization by improving the use of spectrum through increased sharing and spectrum efficiency. It would provide a much more rapid method for the Federal agencies to obtain spectrum to operate their radio communications. It would also provide a method for the radiocommunication manufacturers to ensure that their systems meet Federal spectrum standards and provide the Federal agencies a means to obtain technical information on radio communications for planning spectrum use in the future.

NTIA will design, test, and implement an advanced automated Federal spectrum management system to replace an aging, time-consuming, and costly process now in use. The automation will include an on-line spectrum certification capability wherein the private sector radiocommunication manufacturer's can get Government certification that their radios meet the standards contained in the NTIA Manual Regulations & Procedures for Federal Radio Frequency Management. The result will be largely paperless management, decision making, and information exchange processes combined with more responsive and efficient processes for authorizing Federal frequency use. NTIA spectrum management will be able to meet the increasing Federal demands for wireless communication systems and services, including rapidly expanding public safety related needs, within the reduced spectrum resources available by incorporating state-of-the-art information processing, technical analysis, and communications technologies.

Current Process

NTIA spectrum management involves three closely linked processes. The first, Federal radiocommunication policy development, relies heavily upon the advice of the Federal spectrum user community via the 20-member Interdepartment Radio Advisory Committee (IRAC). The more than 200 meetings of the IRAC and its subcommittees each year involve the exchange, reproduction, and distribution of over 100,000 pages of documents. Physical copies of all current documents are maintained and archived annually on microfilm. This paper process is costly, time-consuming, and difficult to use, but must continue until replaced in the FY 2001-2003 time frame through this initiative. In the second process, spectrum planning, NTIA certifies spectrum availability for approximately 100 major, new Federal radiocommunication systems costing annually over $2 billion, using document-based information processing techniques. In the third process, frequency assignment, NTIA processes approximately 8,000 to 10,000 frequency assignment actions monthly. Each new station must be coordinated with many others already authorized by NTIA and, in shared bands, with the Federal Communications Commission to avoid harmful interference between stations. Furthermore, the constant growth in numbers of stations authorized by NTIA (doubled since 1980) is increasing both the complexity of and time requirements for coordination. Currently there is no method for private sector radiocommunication manufacturers to determine whether their radios meet the standards contained in the NTIA manual; nor, is there a central location where the Federal agencies can obtain information on radiocommunications that could meet their communication needs and would conform to NTIA standards.

Information processing requirements are now being met by work stations which just recently replaced a mainframe computer and software developed over 30 years ago. The present system cannot support state-of-the-art client/server database techniques needed to provide Federal agencies with on-line access to spectrum management data. There is a need to provide modern state-of-the-art data processing, telecommunications, and management tools to the Federal spectrum management community that embody many of the advantages and features of the evolving National Information Infrastructure.

The computerized tools and information infrastructure that are to be developed in FY 2001 will significantly reduce the time it takes to satisfy Federal radiocommunication requirements. Paperless distribution of documents will allow more rapid review of proposals and development of policies and will eliminate many costly coordination meetings now required for routine matters. Standardized programs for preparation, review and submission of requests for system review and frequency assignment will eliminate most submission errors, since each submitting agency will be able to access NTIA screening programs.

Current Modernization Efforts

In FY 1994, NTIA began a multi-year effort to modernize its information processing resources. The first phase was the development of a capability for automated frequency selection and preparation of frequency authorization planning and usage requests on PC's, the Joint Automated Spectrum Management System (JSMS). JSMS automated many of the existing frequency assignment and planning processes at the agency level and below. JSMS was completed in FY 1996 and provided to the Federal agencies. Also in FY 1997, the Annapolis engineering and computer operations was relocated to the Commerce Department, Washington, D.C. office. As part of this relocation, the mainframe computer and associated software is being replaced with more efficient work station computers and associated software. The process was recently completed in December 1999 but will only satisfy the current frequency assignment and engineering processes. Work will continue through FY 2000 on the JSMS to include new capabilities that will make use of the spectrum more efficient. Monthly training classes have been provided to the Federal agencies on the use of JSMS. In FY 1998, NTIA awarded a contract to convert all prior paper documentation (some 40 years worth) associated with the administration of the IRAC to an electronic media, CD-ROM. This will enable any user to obtain via a search engine any spectrum information in the past 40 years. This is almost impossible at the present time. This will enable rapid access to historical

information and application of such information to present and future spectrum issues and problems. In FY 2000, NTIA will convert the JSMS capability to a follow-on program, Spectrum XXI, in cooperation with Department of Defense's Joint Spectrum Center, which will provide a potential client/server approach to spectrum management. This type of approach could provide a direct connection between the Federal agency applicant for spectrum and NTIA, the Federal spectrum authorizer, from anywhere in the world. Using this capability, the Federal agency requestor could obtain almost instantaneous frequency assignments as compared to a minimum of 15 days or longer depending on compliance with NTIA rules and regulations and potential interference issues.

The second phase of the modernization effort that is requested for FY 2001 is to develop the specifications for the necessary communications, computer and electronic processing capabilities to provide a secure, two-way communications highway from NTIA to the IRAC representatives based on the experimentation in phase one above as associated with the server/client approach and new communication security technology. This effort will define the capability required, select an architecture that will satisfy the defined capability, and define the necessary communications, hardware, software and associated integration based on the architecture chosen. A time phased implementation schedule and cost estimates will also be provided in this phase for both the Federal agencies and NTIA. NTIA will also develop plans to build the necessary software that will enable the private sector to access via Internet the NTIA web site wherein they can provide technical characteristics of their radio systems and be provided feedback as to whether their system passes the NTIA standards. This data base of information from the private sector will then be available to the Federal agencies for their use in identifying radiocommunications equipments that have passed NTIA standards tests.

FY 2002 funds will be required for the third phase of the modernization effort which will continue through FY 2004. In the third phase, NTIA will implement the results of the FY 2001 initiative by contracting for the procurement of the necessary communications and system hardware and software; the acceptance testing of the system; the training of Federal users; and turning the system over to NTIA for continued maintenance and operational use. This system will replace the existing NTIA spectrum management system and related automated processes. NTIA will also implement plans to bring on-line the private sector certification capability and make it operational in FY 2002.

The information infrastructure system will be completed in FY 2004 and the total cost is estimated to be $4.9 million. The fourth phase, FY 2005 and beyond, will include the information infrastructure operation, maintenance, upgrades and any other integration. This new Infrastructure will be the cornerstone of NTIA's efforts to more efficiently and effectively manage the Federal Government's use of the spectrum so that foreseeable radiocommunications requirements of the Federal agencies can be satisfied and more spectrum can be shared with non-Federal users of the spectrum.

This initiative will ultimately benefit society by making the spectrum management process more efficient and effective by providing the tools and processes for Federal Government agencies to use the National Information Infrastructure to submit error-free requests for access to the radio frequency spectrum and to coordinate interagency policy advice with fewer meetings and limited exchange of documents. This will allow existing Federal spectrum management staff to support the rapidly expanding requirements of the government for radiocommunications for the future without increasing FTE resources through automation. Moreover, the use of standardized processes for assessing interference potential between stations will lead to increased efficiency and effectiveness in the use of the spectrum. The initiative will also provide the radiocommunication manufacturers the capability to determine whether their radios meet Federal spectrum standards and at the same time provide the Federal agencies with their equipment technical characteristics for use in the agency's spectrum planning activities. Presently, there is no standard centralized method to perform these activities.

PERFORMANCE MEASURES:

OUTPUTS:

A communications/computer network by which the Federal agencies can request and obtain authorization to use the radio spectrum, obtain the latest frequency authorizations approved by NTIA for any location in the United States. Can determine interference, can perform automated checks to determine compliance with NTIA spectrum management rules and regulations, can determine the status of any frequency assignment actions, and can provide their comments and approvals on any other agency's request for frequency assignment action.

A mobile desktop computer spectrum management capability for NTIA and agency use in requesting spectrum authorizations, performing interference analysis, performing compliance with NTIA spectrum management rules and regulations, and for preparing spectrum certification requests for new radiocommunication systems.

OUTCOMES:

1. This network and portable desktop capabilities will also permit NTIA and the Federal agencies to maximize the efficiency with which they manage and use the spectrum. The processes will permit each agency to perform detailed technical analyses to determine how to satisfy each telecommunication requirement and to consider a much wider variety of spectrum available to meet their requirements. Since agencies will have broader access they will no longer need to reserve frequencies for contingent use. This will permit more closely packed assignments and increased sharing with other users of the spectrum.

2. These capabilities will: (a) enable NTIA to make sure that all frequency authorizations conform to spectrum standards and comply with NTIA guidance provided during system development, neither of which is being accomplished effectively at this time; (b) increase efficiency in Federal use of the radio spectrum through increasing the average number of users per authorized frequency; (c) increase probability that frequencies will continue to be available for Federal operations by conserving the spectrum; (d) increase efficiency and effectiveness of coordination between NTIA, the Federal spectrum users, the FCC and non-Federal spectrum users, by using electronic means of information transfer; (e) decrease processing time and submission errors by using government-wide standard techniques and processes; (f) reduce or eliminate paper transactions; (g) increase linkages between all spectrum management processes by developing, and implementing an automated processing, standardized definitions of terms and algorithms.

OTHER AGENCY INVOLVEMENT: NTIA has been working with the Department of Defense's (DOD) Joint Spectrum Center (JSC) since FY 1994 to develop the JSMS, the follow-on to JSMS (Spectrum XXI) and future requirements of the information infrastructure. DOD has, and will continue to have, global spectrum management and communication requirements. NTIA and JSC have an on-going memorandum of understanding (MOU) which will prevent duplication of effort and the basis for a more uniform cost effective approach to automating spectrum management that will satisfy all Federal agency requirements.

The Federal agencies will also be involved in the infrastructure development and implementation as a result of their participation in the IRAC. The Federal agencies will continue to be a partner in financing this initiative since Congress requires the user Federal agencies to reimburse NTIA for 80 percent of the cost of spectrum management operations.

Exhibit 15

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: Spectrum Management
Program Change: Federal Government Spectrum Management Information Infrastructure

Object Class		Direct Appropriation	Reimbursable	Total 2001 Increase
11	Personnel compensation			
11.1	Full-time permanent	0	0	0
11.3	Other than full-time permanent			
11.5	Other personnel compensation			
11.9	Total personnel compensation	0	0	0
12.1	Civilian personnel Benefits	0	0	0
21	Travel and transportation of persons	0	0	0
22	Transportation of things	0	0	0
23.1	Rental payments to GSA	0	0	0
23.2	Rental payments to others	0	0	0
23.3	Communications, utilities and misc charges	0	0	0
24	Printing and reproduction	0	0	0
25.1	Consulting Services	0	0	0
25.2	Other Services	0	0	0
25.3	Purchase of goods & services from Gov't accounts	200	800	1,000
25.7	Operation and maintenance of equipment	0	0	0
26	Supplies and materials	0	0	0
31	Equipment	0	0	0
99	**Total obligations**	200	800	1,000

Department of Commerce
National Telecommunication and Information Administration
Spectrum Management
Salaries and Expenses

FY 2001 Budget Initiative
Critical Information Protection
Communications and Information Infrastructure Assurance Program -- Lead Agency

Appropriation:	+$3.5 million	Permanent Pos.	16	FTEs:	16
Reimbursable:	0	Permanent Pos.	0	FTEs:	0

Critical Infrastructure Protection - Lead Agency (+13 FTEs, +$2,500)

The President issued his Critical Infrastructure Protection Directive (PDD-63), directing the establishment of an interagency program to address the Nation's need for protection of its critical infrastructures following the recommendations of a Commission created under Executive Order 13010. The program is coordinated across the Government at a senior level in the National Security Council. The primary emphasis in this program is on lead agencies that have been given responsibilities to work in close partnership with industry for the protection of specific infrastructure sectors. The President has assigned to the Department of Commerce the lead agency responsibilities for the information and communications (I&C) infrastructure. The Secretary of Commerce has designated NTIA to carry out those responsibilities.

Public–Private Partnership to Reduce Vulnerability: The protection of critical infrastructures in the national interest requires a closely coordinated effort of both public and private sectors since most of the I&C infrastructure is owned and operated by the private sector, much of the expertise and knowledge required is in industry and the resources required exceed those available sole to either the government or the industry. The Assistant Secretary for Communications and Information and Administrator of NTIA, will serve as the United States Government Sector Liaison Official (SLO) under Presidential Decision Directive 63 to work with the I&C sector.

NTIA and the Private Sector: NTIA conducted in-depth discussions and meetings with a broad cross section of the I&C sector for the purpose of facilitating the identification of a Sector Coordinator (SC) or, if necessary, several coordinators. In response to the President's emphasis on critical infrastructure protection, three of the major trade associations serving the I&C sector formed the Consortium for Critical Infrastructure Protection with the objective of working closely with NTIA on these issues. The three associations are: Information Technology Association of America (ITAA), Telecommunications Industry Association (TIA) and United States Telecom Association (USTA). The Deputy Secretary of Commerce announced in April, 1999, that the Department has recognized this consortium as the Sector Coordinator (SC) as defined in PDD-63. The SC is to represent the sector in a wide range of infrastructure assurance matters and is to work closely with NTIA in accomplishing the

objectives of the President's program. In meeting these objectives, the SC has decided to expand the consortium to include otherwise under represented elements of the sector, e.g., the wireless industry. The SC serves as the gateway for NTIA's liaison with the I&C sector but this relationship does not preclude other NTIA-industry liaison activities. The activities of the SC are purely voluntary and the Government has no authority to direct them. NTIA must be in a position to recommend appropriate actions to the President in the event that cooperative efforts fall short of his objectives. The intention of the President's program is that the SLO and the SC would cooperate in recommending the sector's infrastructure assurance plan, which would become a major element in the National plan, as well as in developing and implementing a vulnerability and awareness program for the sector and addressing key policy issues to arrive at solutions that best meet the needs of the United States.

NTIA will be responsible for:

1. Ensuring that Commerce and I&C sector perspectives on infrastructure assurance are adequately reflected in Government deliberations.

2. Working with the I&C sector to develop its infrastructure assurance plan, which will become a major element of the national infrastructure assurance plan (NIAP). The sector plan structure will be defined by the needs of the sector and will probably include the following elements: methodology for identifying and assessing the sector's vulnerabilities; process for determining technology needed to protect the infrastructure and to incorporate industry needs in the government R&D program, options for identifying and limiting major attacks upon the infrastructure; plan for alerting, containing and defeating an attack; and a plan for recovery and reconstitution of the infrastructure. The sector plan will be updated regularly. It will be integrated into the national plan.

3. Establishing and maintaining channels of communication with private and public entities, domestic and foreign, having significant interest or involvement in I&C infrastructure assurance and, consistent with State Department efforts, encouraging compatible efforts by other countries and international organizations to protect the global I&C infrastructure.

4. Developing and implementing, in coordination with the SC, an awareness and education program for the sector.

5. Drafting and proposing legislation and regulations that will enhance infrastructure assurance programs, as appropriate.

6. Supporting the (to be amended) Federal Response Plan (FRP), coordinating management of the consequences of infrastructure attack and preparing for various contingencies through participation in training and exercise programs.

7. Coordinating, as appropriate, infrastructure assurance issues and activities with the office of the National Coordinator (NC), the Critical Infrastructure Assurance Office (CIAO) other sector lead agencies, functional lead agencies, the FBI's National Infrastructure Protection Center, as well as with appropriate organizations at all levels of Government.

8. Identifying sector research and development (R&D) needs, and incorporating them into the national infrastructure assurance research and development program.

9. Facilitating private investment, and/or public incentives, in infrastructure assurance programs, as appropriate.

10. Developing budget requirements for infrastructure assurance activities.

Interagency Coordination: Critical Infrastructure Coordination Group (CICG)

The Secretary of Commerce has designated the Assistant Secretary for Information and Communication as the Department's representative to the CICG, chaired by the National Coordinator (NC) for Security, Infrastructure Protection and Counter-Terrorism, who will be responsible for coordinating the implementation of the Critical Infrastructure Protection directive.

Tasks with specific Deadlines

The President has set a deadline of December 2000 for having made substantial progress in protecting the nation's critical infrastructures and a deadline of May, 2003 for having in place a fully operational capability that would ensure that " any interruption or manipulation of these critical functions must be brief, infrequent, manageable, geographically isolated, and minimally detrimental to the welfare of the United States."

National Infrastructure Assurance Plan: The first version of the National Plan has been completed and released to the public. It deals with the federal government's efforts in protecting information systems in addressing the President's objectives. The next version of the plan is intended to reflect the efforts being made to protect the full range of the nation's critical infrastructures.

Review and Implementation

Annual Report: In addition to the above mentioned plan, the NC, working with the National Economic Council (NEC), and based upon materials provided by the lead agencies will provide an annual report on the implementation of this directive to the President and the heads of departments and agencies, through the Assistant to the President for National Security Affairs.

Two Year Review: The Critical Infrastructure Coordination Group (CIGC) will conduct an expert review process for the plans for Critical Infrastructure Protection no later than two years from May 23, 1998. The review process will rely on sector experts and the SLO input. The sector Critical Infrastructure Protection Plans shall be updated every two years.

Following the establishment of an initial operating capability in the year 2000, the NC will conduct a zero-based review. This will require cooperation and coordination with the private sector.

Information Sharing and Analysis Center (ISAC) (+3 FTEs, +$1,000)

This initiative is to facilitate the establishment of an ISAC for the Information and Communications sector as directed in Presidential Decision Directive (PDD) 63.

PDD-63 directs that the Government shall "strongly encourage the creation of a private sector information and analysis center." The design and functions of such a center as well as its relationships with Government agencies and other sectors' ISACs are to be determined by the private sector in consultation with and assistance from the Government.

The PDD is not prescriptive concerning the functions, organization or operation of the ISAC. It anticipates, however, that the ISAC "...could serve as the mechanism for gathering, analyzing, appropriately sanitizing and disseminating private sector information to both industry and the NIPC" (National Infrastructure Protection Center in the FBI). It is also envisioned as the "mechanism for sharing important information about vulnerabilities, threats, intrusions and anomalies..."

While its ultimate design and operation are private sector prerogatives, the PDD envisions the possibility that the ISAC would have a "large degree of technical focus and expertise... establish baseline statistics and patterns...become a clearinghouse for information... and provide a library for historical data to be used by the private sector and, as deemed appropriate by the ISAC, by the Government." OMB's guidance is that NTIA provide that degree of support necessary to help stimulate such an effort.

Under the National Security Telecommunications Advisory Council (NSTAC), a Presidential advisory committee supported administratively by the National Communications System (NCS) an interagency organization housed in the Department of Defense, there is an ISAC. It is called the National Coordination Center (NCC) and it is available to any of the 30 members of NSTAC. While the NCC is an ISAC, its membership is not widely available to the I&C sector. Moreover, because it includes government participation, the application of FOIA and other laws needs to be taken into account. For these reasons, there remains a need for an ISAC to serve the remainder of the I&C sector and to provide the option for industry to exclude explicit participation by the government. These considerations are in line with guidance provided by the National Coordinator (NC) and by the Presidential Decision Directive on Critical Infrastructure Protection.

During FY 2000, the I&C sector coordinators and others will be considering a set of options for organizing and establishing an ISAC to serve the needs of the I&C sector. The task in FY 2001 will be to start up the ISAC, obtain broad acceptance within the sector, establish functions and lines of communication, and begin operations. Ultimately, the major segment of ISAC funding is expected to come from the sector. However, we will need to consider the possible requirement for some support by the Government to address the President's objectives.

1. Government issues related to establishment of the ISAC. In this element, NTIA will facilitate the resolution of specific issues that may affect the operation of the ISAC. For example, we will solicit advisory opinions and guidance on: antitrust implications, non-application of Federal Advisory Committee Act, applicability of national security classification procedures, methods for protection of privacy, applicability of non-disclosure agreements, and mechanisms for assuring the security and anonymity of sensitive information.

2. Establishing Lines of Communication. NTIA will undertake, with the ISAC organization, to establish effective lines of communication between the ISAC and federal agencies such as NIPC, the Intelligence Community, DOD, NCS/NSTAC, the I&C sector liaison and coordination officials; and other lead agencies under PDD 63. NTIA will also assist, as appropriate, in establishing lines of communication within the sector.

3. Operations. NTIA will assist the ISAC in establishing viable procedures to ensure the best flow and protection of important data/information. NTIA will assist in identifying, from the Government's perspective, key issues needing analysis and will assist in the development and transfer of appropriate analytic methodologies. NTIA will assist the ISAC in identifying resource needs and sources. NTIA will facilitate the acquisition by the ISAC of Government-originated information.

This initiative is expected to incur continuing costs at a reduced level once the ISAC is established and running as designed.

PERFORMANCE MEASURES

I. SECTOR INFRASTRUCTURE ASSURANCE PLAN: The plan structure will be determined on the basis of the needs and characteristics of the I&C sector. It will probably include:

(1) Vulnerability Methodology: NTIA, with the industry Sector Coordinator, will address the development and implementation of a methodology to identify national telecommunications and information systems vulnerabilities.

Outputs: Consistent with industry needs and constraints, a documented characterization of the vulnerability assessment methodology and the results of its application in the sector appropriate to serve as a basis for a remedial plan.

Outcomes: The initial establishment of a protection strategy and plan for the I&C infrastructure based upon the assessment of vulnerabilities and other elements.

(2) Remedial Plan: NTIA, with the industry Sector Coordinator, will address the development and implementation of a Remedial Plan, consistent with the needs and constraints in the sector. This plan is expected to be based on a vulnerability analysis that addresses key vulnerabilities, assigns responsibilities and identifies funding and other resource requirements.

Outputs: A Remedial Plan with time lines for implementation, assignment of responsibilities and identification of resource requirements, consistent with the needs and constraints of the sector.

Outcomes: The operational capability to protect the I&C infrastructure.

(3) Response: NTIA and the industry SC shall address the design and implementation of a system to respond to a significant infrastructure attack while it is underway, with the goal of isolating and minimizing damage. The first step anticipated by NTIA is development of a response

plan, followed by identification of technology needs, designation of responsibilities, and identification of resource requirements.

Outputs: Consistent with the needs and constraints of the sector, development of a Response Plan formulated jointly by NTIA and the industry SC to respond immediately to an attack underway on the telecommunications and information infrastructure; documentation of technology and resource needs as well as recommended assignment of responsibilities.

Outcomes: As part of the operating capability, a Response Plan to respond immediately to infrastructure attacks underway, isolating and minimizing damage, and an improved capability to defend the infrastructure.

(4) Reconstitution: For varying levels of infrastructure attacks, NTIA and the industry SC will consider a system to reconstitute minimum required capabilities rapidly.

Outputs: Consistent with the needs and constraints of the sector, design characteristics for a multi-level defense system jointly by NTIA and the industry SC to respond to varying levels of infrastructure attacks; creation of a system to rapidly reconstitute minimum infrastructure capabilities required.

Outcomes: As part of the operational capability, a multi-level defense system to respond to varying levels of infrastructure attacks, and a system to rapidly reconstitute minimum infrastructure capabilities, and an improved capability to defend the infrastructure.

(5) Vulnerability Awareness and Education: NTIA and the industry SC , consistent with the needs and constraints of the sector, will continue to develop Vulnerability Awareness and Education Programs within the Government and private sector to improve the awareness of the general public and specialists in I&C concerning the threats and vulnerabilities of the infrastructure and their implications; and to train people in security practices and standards, particularly regarding cyber systems.

Outputs: Materials for publication, speeches, presentations for audiences at all levels across the infrastructure, exercises, demonstrations and simulations. Formulation of Vulnerability Awareness and Education Programs within the Government and private sector to train people in security practices and standards.

Outcomes: Greater Government and private sector awareness of telecommunications and information infrastructure vulnerability and security standards to protect the infrastructure.

(6) Research and Development: NTIA and the industry SC will examine Federally sponsored R&D to support infrastructure protection in the light of industry needs and its own R&D efforts. NTIA will ensure that sector perspectives are provided to the CICG R&D committee and other R&D agencies. These perspectives will take into account the possibility of multi-year funding, multi-agency activities, private sector and foreign research, and will identify sector views on adequate support to most effectively manage U.S. vulnerabilities on an achievable timetable.

Outputs: Coordination of Federally sponsored R&D on a timely basis by the Government in light of industry needs and perspectives to support infrastructure protection and diminish U.S. vulnerabilities.

Outcomes: Federally sponsored R&D programs incorporating private sector guidance to diminish U.S. vulnerabilities and improve protection in the telecommunications and information infrastructure.

(7) International Cooperation: With leadership from NTIA, consistent with State Department activities, expand cooperation on critical infrastructure protection with like-minded and friendly nations, international organizations, and multinational corporations in order to improve protection of the I&C infrastructure.
Outputs: A plan for expanding cooperation on critical infrastructure protection with like-minded and friendly nations, international organizations, and multinational corporations, that takes into account the needs of the I&C sector and its constraints.

Outcomes: International support and cooperation in achieving an initial operating capability and to continually improve that capability.

(8) Legislative and Budgetary Requirements: Evaluate the legislative authorities and relevant public laws as well as budgetary priorities affecting protection of the I&C infrastructure, and make recommendations to the President, as necessary, in coordination with OMB.

Outputs: NTIA proposals for any necessary additional or changed legislation and regulations that are needed to accomplish the objectives of the President's program. Development of budget requirements for infrastructure assurance-related activities. Development of innovative approaches to funding the necessary actions for I&C infrastructure assurance.

Outcomes: Effective legislation and regulations to enhance and protect the telecommunications and information infrastructure.

II. ANNUAL REPORT

Report on Implementation of Critical Infrastructure Program: The NC, working with the National Economic Council (NEC), will provide an annual report on the implementation of this Critical Infrastructure Protection directive to the President and the heads of departments and agencies, through the Assistant to the President for National Security Affairs. As the lead agency regarding telecommunications and information infrastructure protection, NTIA is responsible for drafting the I&C segment of the report, and obtaining proper clearances from the NC and the National Economic Council.

Outputs: Development of an Annual Report by NTIA, following a schedule provided by the NC, on the status of the Critical Infrastructure Protection program, with interagency clearance, to the NC, through the Assistant to the President for National Security Affairs, for the President and the heads of departments and agencies.

Outcomes: Annual Report on the status of the Critical Infrastructure Protection program.

III. TWO YEAR REVIEW

The CICG will conduct an expert review process of the plans for Critical Infrastructure Protection no later than two years from May 23, 1998.

(1) Expert Review Process: By May 23, 2000, at the direction of the NC, NTIA as the lead agency for protection of critical telecommunications and information infrastructure, will participate in and lead portions of an expert review of the plans for Critical Infrastructure Protection, and will submit a report through the NC to the CICG.

Outputs: Drafting of an expert review of the plans for Critical Infrastructure Protection by NTIA, with recommendations.

Outcomes: Expert review of the plans for Critical Infrastructure Protection with recommendations, to the CICG.

(2) Zero-Based Review: Following the establishment of an initial operating capability of the Critical Infrastructure Protection program in the year 2000, the NC will conduct a zero-based review.

Outputs: Following the year 2000, NTIA, as the lead agency for protection of critical telecommunications and information infrastructure, will conduct a zero-based financial review of funding for the Critical Infrastructure Protection program for submission to the NC.

Outcomes: A zero-based financial review of the funding for the Critical Infrastructure Protection program for submission to the NC.

(3) Two-Year Updates of Review: The Critical Infrastructure Protection Plans shall be updated every two years.

Outputs: In the year 2002, and subsequently on a two year cycle, NTIA, as the lead agency for protection of critical telecommunications and information infrastructure, will perform an update of the NTIA/Department of Commerce Telecommunications and Information Infrastructure Protection Plan and the National Infrastructure Assurance Plan, which will be submitted to the NC.

Outcomes: Two-year updates of the Critical Infrastructure Protection Plans to be provided by NTIA to the NC.

Exhibit 14

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM CHANGE PERSONNEL DETAIL

Activity: Spectrum Management
Program Change: Critical Information Protection
Communications and Information Infrastructure Assurance Program - Lead Agency

Personnel Title:		Grade	Number	2000 Annual Salary	Total Salaries
Director		SES-2	1	121,264	121,264
Telecommunications Specialist		15	3	84,638	253,914
Telecommunications Specialist		14	3	71,954	215,862
Telecommunications Specialist		13	3	60,890	182,670
Telecommunications Analyst		12	2	51,204	102,408
Administrative Assistant		11	2	42,724	85,448
Secretary		7	2	28,866	57,732
Subtotal			16		1,019,298
Less lapse	0.00%		0		0
Total full-time permanent			16		1,019,298
2001 Pay Adjustment	3.7%				37,714
					1,057,012

Personnel Data	
Full-Time Equivalent Employment:	
Full-time permanent	16
Other than full-time permanent	0
Total	16
Authorized Positions:	
Full-time permanent	16
Other than full-time permanent	0
Total	16

Exhibit 15

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: Spectrum Management
Program Change: Critical Information Protection
Communications and Information Infrastructure Assurance Program - Lead Agency

Object Class		2001 Increase
11	Personnel compensation	
11.1	Full-time permanent	1,057
11.3	Other than full-time permanent	
11.5	Other personnel compensation	
11.9	Total personnel compensation	1,057
12.1	Civilian personnel Benefits	271
21	Travel and transportation of persons	400
22	Transportation of things	2
23.1	Rental payments to GSA	218
23.2	Rental payments to others	0
23.3	Communications, utilities and misc charges	44
24	Printing and reproduction	27
25.1	Consulting Services	0
25.2	Other Services	1,300
25.3	Purchase of goods & services from Gov't accounts	77
25.7	Operation and maintenance of equipment	14
26	Supplies and materials	15
31	Equipment	75
99	**Total obligations**	3,500

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: Salaries and expenses
Subactivity: Telecommunication sciences research

Comparison by line item		1999 Actual		FY 2000 Currently Available		2001 Base		2001 Estimate		2001 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Telecommunication sciences research.....	Pos/BA	37	$3,532	37	$3,567	37	$3,567	47	$5,567	10	$2,000
	FTE/Obl.	31	3,531	37	3,568	37		47		10	
Critical infrastructure protection.....	Pos/BA	0	0	0	0	0	0	5	2,800	5	2,800
	FTE/Obl.	0	0	0	0	0		5		5	
Direct Obligations.....	Pos/BA	37	3,532	37	3,567	37	3,567	52	8,367	15	4,800
	FTE/Obl.	31	3,531	37	3,568	37		52		15	

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
Telecommunication Sciences Research
Justification of Program and Performance

Goal Statement

Through telecommunication research and engineering, NTIA supports Administration telecommunication goals such as enhanced domestic competition, advanced services deployment, improved foreign trade opportunities for U.S. telecommunication firms, and more efficient use of the radio frequency spectrum. Specifically, the goals of the Telecommunication Sciences Research activity are to:

- Continue applied engineering and measurement work that is essential to effective NTIA and FCC management of the radio frequency spectrum and the efficient implementation of advanced wireless, public safety, broadcasting, and satellite communications technologies.
- Provide technical advice to support the mandate of NTIA to develop and promulgate Executive Branch policies addressing domestic and international telecommunications and information issues.
- Organize and coordinate preparations for U.S. participation in international telecommunications conferences and negotiations in cooperation with other interested agencies and industry groups.
- Develop and present public interest and user-oriented technical contributions to national and international standards organizations addressing Quality of Service (QOS) and other topics critical to the development and implementation of advanced IP based networks and emerging National Global Information Infrastructures.
- Accomplish research and engineering to promote technology advancement and the efficient delivery of public services, enabling private industry, other Federal agencies, and State and local governments to meet their specific telecommunications needs.
- Promote timely, effective application of NTIA's research and engineering results through technology transfer and commercialization activities.

Proposed Legislation

Legislation to authorize appropriations for the continuation of this program.

Base Program

Explanation and Justification

Through the Telecommunication Sciences Research activity, NTIA performs state-of-the-art telecommunication research and engineering to further the knowledge of the radio frequency spectrum and to improve wireless telecommunications system planning, design, and evaluation. These efforts directly support industry and Government needs, and directly respond to the requirements of NTIA and the FCC to manage Federal and non-Federal use of the radio spectrum. NTIA research in this area addresses national needs of such broad application that they are beyond the abilities and/or economic incentives of other government agencies and private industry. This technical research is directed toward improving the understanding of radio-wave transmission and wireless communications to enhance spectrum utilization and the performance of advanced wireless systems. Important results of this research are spectrum use concepts, models, and measurements that lead to more efficient industry and Government use of the radio frequency spectrum, and electromagnetic wave propagation models and signal processing methods that lead to improvement in radio and wireless system performance. This knowledge base is essential to support the Government's spectrum management responsibilities and for technical support to other Federal agencies and industry. These research and engineering efforts will result in an improved U.S. telecommunications technology base and a strong technical foundation for telecommunication standards development in national and international arenas.

As a result of these activities, NTIA has established a core telecommunications research expertise that is accessible to both the public and private sectors. Through cooperative research and development agreements (CRADAs) with industry and reimbursable agreements with other Federal agencies, NTIA applies its expertise to practical problems in telecommunications today. For example, both the private sector and other government agencies have access to NTIA’s advanced propagation models (that simulate the radio environment) through direct access, at cost, to an on-line service that provides the opportunity to apply the latest scientific understanding to specific problems. Direct-funded NTIA programs and other agency-sponsored research interact in a synergistic manner, leading to greater contributions to national needs and the spectrum management role of the government.

In support of NTIA's mandate to oversee the usage of the radio spectrum by Federal agencies, NTIA maintains a mobile capability to measure the use of the spectrum. NTIA utilizes a Radio Spectrum Measurement System (RSMS) van, which is equipped with sophisticated electronic instrumentation, to monitor signals between 10 kHz and 20 GHz. NTIA utilizes this system to perform measurements in the land and marine mobile and radar bands at selected sites, and to make other specialized measurements necessary to ensure compliance with frequency assignment rules and regulations. NTIA conducts definitive measurements of spectrum usage in selected bands and summarizes the results in support of specific IRAC concerns. The RSMS is also used to resolve difficult interference problems where a Government system is thought to be involved. This activity often saves costs to Federal agencies and the private sector that far exceed the funding for this effort. The RSMS is available for other agency applications on a reimbursable basis. NTIA also assists various Department of Defense agencies and the FAA in efficiently operating their own radio spectrum measurement programs through technical consultations, and modification, design, and construction of new radio spectrum measurement systems. This reimbursable work draws on expertise developed for the RSMS, but also provides an opportunity to investigate advanced measurement hardware and software for use in the RSMS itself. As new wireless technologies emerge, NTIA must strengthen its efforts in FY 2001 to develop improved software and measurement techniques to support increasingly sophisticated uses of the spectrum, including spread-spectrum, ultra-wideband, and frequency agile systems.

NTIA performs spectrum engineering analyses as required to assess current and future Federal use of the spectrum and determine where significant improvements in utilization appear possible. NTIA is currently assessing emerging spectrum requirements for public safety and law enforcement in coordination with the National Coordination Committee, the Public Safety Wireless Network Program, and the Federal Law Enforcement Wireless Users Group. NTIA is also evaluating the Federal Government's use of its spectrum to determine if the application of marketplace factors would result in more efficient and economic spectrum use. In FY 2001, NTIA will continue to support essential spectrum utilization analyses including the impact of new broadband technologies. Technical support will be continued on major frequency management concerns through representation at technical subcommittee (IRAC) meetings with principal emphasis on improving Federal spectrum use efficiency.

The trend in the world is toward providing diverse services, such as audio, video, data, broadcasting, and common carrier services through an integrated system of wire-line and wireless networks. Radio has an important role in portable and mobile communications, and will play an increasingly important role in connecting the end user to the information infrastructure and providing personal communication services. Another trend becoming evident as technology advances is that of radio systems utilizing higher frequencies. Many radio systems are already moving into the millimeter-wave band, located at the upper end of the allocated radio spectrum (30-300 GHz). Reallocating existing users of lower bands to these higher frequency ranges will reduce spectrum congestion and provide additional frequency availability. NTIA is a key source of information characterizing radio propagation in support of spectrum policy and management as well as the development and deployment of new technologies such as third generation wireless, wireless local loop, and millimeter-wave systems.

NTIA continues to provide support to the development and deployment of various wireless technologies such as Personal Communication Services (PCS), third generation wireless, and Local Multipoint Distribution Services (LMDS). Knowledge from measurements and modeling of advanced antenna technologies, (e.g., adaptive antennas), and the propagation of radio waves on short paths in man-made environments are crucial in the planning, development, and deployment of commercially viable systems. NTIA is developing the means to predict the performance of radio systems operating over short paths using detailed geographic databases. NTIA is also operating an advanced antenna test bed for evaluation and comparison of the performance and spectral efficiency of adaptive antennas. NTIA supports private industry in their wireless technology development efforts through technology transfer under CRADAs. Under CRADAs with U S WEST Advanced Technologies and Lucent Technologies, NTIA is contributing to the development of advanced antenna technologies. In a CRADA with Lehman Chambers, NTIA is assisting in the design of facilities for certification testing of electronic products for exportation to Europe. These technology transfer activities will continue into FY 2001.

The NTIA Broadband Radio program supports the development of broadband wireless technologies such as wireless local area networks through models and measurements that enable the accurate prediction of broadband communication system performance in various radio environments. These models serve as a basis for system planning and design as well as spectrum regulation. To this end, NTIA studies are directed toward a better understanding of the behavior of broadband radio waves in indoor and outdoor environments. A second objective is to demonstrate the viability of various broadband radio systems (including millimeter wave systems) through the development of models and radio link simulators that analyze the effects of the radio channel on end-to-end system performance. These demonstrations validate the most effective uses of millimeter waves for telecommunications and so accelerate commercial development.

Under other agency agreements, NTIA is providing telecommunications planning assistance to a variety of Federal agencies. NTIA has completed a national plan, approved by the Secretary of Transportation, for augmented Global Positioning System (GPS) to meet the navigational and positional needs of all modes of surface transportation. NTIA has developed a national deployment plan for the ground-based system. NTIA is assisting the National Institute of Justice, through the NIST Office of Law Enforcement Standards to develop a comprehensive suite of interoperability standards that will allow wireless telecommunications interoperability and information sharing among local states and federal users in the public safety and criminal justice communities. NTIA is also assisting the National Security Agency and other DOD agencies to address the increasing threat to information security.

The demand for new and enhanced telecommunication services such as advanced television (ATV), wireless voice and data, and radio navigation has placed increased burdens on spectrum planners and policy makers. To address this situation, NTIA develops fundamental data and more accurate modeling of radio propagation that will lead to improved methods of planning spectrum sharing among the various users. Future systems will employ wide frequency bandwidths to provide greater transmission capacity. New systems will use digital modulation. Adaptive antennas will also be used to increase capacity. Predicting how these systems can share the same spectrum space requires a better understanding of broadband radio propagation and the use of multi-dimensional modeling techniques. NTIA has provided analysis tools and techniques used in the allocation of channels for advanced television systems, and a technical analysis of ATV broadcasting options. NTIA and FCC engineering personnel have jointly developed the signal coverage and interference analysis programs to evaluate the ATV Allotment Table for over 1,600 broadcast TV stations. NTIA has provided spectrum management tools to assist the private sector in planning and deploying ATV systems. In FY 2001, research activities will be directed toward improving how analog TV channels will be made available for other applications. Improvements undertaken in signal coverage performance models will provide better predictions of the locations where TV viewers will have inferior broadcast TV reception and will be eligible for satellite reception of network programs based upon the Satellite Home Viewers Act.

In cooperation with U.S. industry, NTIA prepares and coordinates proposed domestic and international telecommunications standards, develops and demonstrates technologies for assessing the performance and optimizing the utilization of public and private telecommunication networks from a user perspective, and evaluates emerging technologies for application to future needs. These activities promote international trade opportunities for U.S. telecommunication firms, enhance competition in the U.S. telecommunications industry, and improve the cost effectiveness of Government telecommunications use.

In its international standards activity, NTIA is working to expand trade opportunities for U.S. telecommunications and information providers by leading and supporting U.S. participation in key technical negotiations of the International Telecommunication Union's Telecommunication Standardization Sector (ITU-T) and Radiocommunication Sector (ITU-R). ITU telecommunication standards and radiocommunication recommendations serve as blueprints for future technology development involving billions of dollars in telecommunications industry investment worldwide. NTIA activities strengthen U.S. participation in ITU negotiations and provide the technical content for international standards and recommendations in areas where unique Government interests and NTIA expertise exist.

Broadband networks employing Synchronous Optical Network /Synchronous Digital Hierarchy (SONET/SDH), Asynchronous Transfer Mode (ATM), Intelligent Network (IN), and advanced Internet Protocol (IP) technologies will provide integrated data, voice, video, and multimedia communication services to subscribers on a worldwide basis, and will enable the development of national and global information infrastructures supporting electronic commerce, education, health care, and other commercial and public service applications. NTIA contributes strongly to the

U.S. ITU-T Study Group responsible for coordinating U.S. contributions to the international standards committees in which these and other advanced technologies are specified. NTIA also leads the international Working Party responsible for SONET/SDH, ATM and IP network performance standards development within ITU-T Study Group 13 (General Network Aspects), and spearheads related multimedia communications quality of service work in Study Group 12 (End-to-end Transmission Performance of Networks and Terminals). These activities will play a key role in economical realization of Quality of Service (QOS) in advanced IP networks and the Global Information Infrastructure (GII). NTIA will continue these important leadership activities, and will conduct focused research supporting the development, demonstration, and implementation of broadband network and Internet/GII performance standards promoting U.S. domestic competition and international trade objectives. NTIA will continue to broaden and strengthen U.S. industry participation in international standards development through seminars and workshops, conference presentations, and technical publications. These outreach activities are particularly beneficial to smaller U.S. telecommunications firms that might otherwise be unable to contribute to ITU activities.

NTIA's international standards activities are complemented by active involvement in the development of U.S. standards for broadband networks and Internet/GII within the American National Standards Institute (ANSI)-accredited T1 (Telecommunications) Standards Committee. NTIA chairs Subcommittee T1A1, which is responsible for developing performance and signal processing (e.g., coding) standards for U.S. broadband digital networks. NTIA also contributes to Subcommittee T1S1, which is responsible for the development of U.S. standards for services, switching, and signaling in emerging broadband networks, and to selected T1A1 working groups, which are responsible for developing performance and coding standards for advanced digital audio (including voice) and video communication systems. NTIA contributions to these national standards committees provide technical solutions to some of the most compelling issues facing U.S. telecommunications planners, and thereby help to more rapidly evolve the GII. Examples include the interoperation of multi-vendor systems employing various transmission media (cable, microwave, fiber, satellite) in a competitive environment, and key ATM network planning issues including traffic management and economical resource sharing among integrated services. NTIA results promote industry competition and innovation in the provision of integrated broadband digital services and facilitate efficient matching of such services with user needs. NTIA will continue to lead and coordinate standards development in key U.S. telecommunications industry forums to ensure that emerging U.S. broadband network standards are consistent with market competition, with Internet evolution and the Administration's GII objectives, and with applicable Government (e.g., OMB, FCC) policy guidelines.

NTIA's international and U.S. standards committee leadership is supported by telecommunications research and engineering activities directed toward the development, implementation, and promulgation of user-oriented performance measures for integrated data, audio (including voice), video, and multimedia communication equipment and services. NTIA will continue to apply its unique expertise and state-of-the-art voice and video measurement laboratories in validating and optimizing telecommunication performance standards. This research is leading U.S. industry and the world in the development of user-oriented, technology-independent performance parameters and measurement methods for high-speed data communication services. In FY 2001, NTIA will continue its groundbreaking work in perception-based audio and video quality assessment and associated digital compression and transmission issues. NTIA will focus its development work towards important new technology areas including Internet multimedia conferencing and advanced television services. Both of these fundamentally new areas pose significant and novel coding, transmission, and quality assessment challenges. NTIA will continue to pursue in-service quality assessment techniques, since these allow for the most relevant assessments and do not require the interruption of services. NTIA will enhance laboratory facilities to allow for fully-automated, all-digital subjective audio-visual testing, and will demonstrate the enhanced audio/video test capabilities to potential industry and

government users. To encourage technology transfer and wide-spread adoption of NTIA-developed audio and video quality assessment technologies, NTIA will develop and make available an easy-to-use, highly portable audio-video assessment software toolkit.

NTIA is also involved in the development of Federal and industry standards under other agency Reimbursable Agreements. This work includes development of Federal telecommunications specifications and standards, proof of concept and demonstration measurements, interoperability analyses, and technical and economic impact assessments. Technology advances advocated by NTIA in domestic and international standards fora are typically also of value in Federal applications. Thus, there is much synergy between the two activities as NTIA works to promote the overarching goals of industry competition, rapid technology advancement, and improved services to Federal and industry users.

NTIA will also continue its ongoing program in Wireless Networking in FY 2001. Emerging third generation wireless technologies offer prospects for providing users ubiquitous and tether-less access to voice, data, and image communications--and a variety of advanced service features--using small, inexpensive, lightweight, low-powered portable radio terminals. Advanced wireless technologies can extend wired information infrastructures to mobile, rural, and other under-served users and can dramatically improve telecommunication service availability in natural disaster and other emergency situations. However, achieving these benefits will require solutions to major implementation problems. As wireless networks and applications expand, interference among users sharing spectrum is likely. Users and service providers hoping to develop advanced wireless networks may be faced with an over-abundance of candidate technologies, many of which are non-interoperable. NTIA is addressing these problems by providing objective, expert technical contributions in support of public interest concerns in national and international committees responsible for resolving wireless network implementation issues. A particular focus of NTIA activity is the development of intra-system and inter-system interference assessment metrics and standards in TIA Engineering Committee TR-46 (Mobile and Personal Communications). Results promote efficient use of increasingly scarce (and expensive) radio spectrum and improve wireless system coverage and performance.

Statement of Operating Objectives

FY 2001 operating objectives for the Telecommunication Sciences Research activity are summarized by program area below.

Radio Spectrum Measurement System: Provide measurements of environmental radio signals assessing levels and types of spectrum occupancy, and resolving selected spectrum management problems.

Spectrum Engineering Analysis: Complete one spectrum engineering analysis. For example, alternatives for a shared public safety wireless network nationwide or other critical system engineering topics will be addressed.

Personal Communication Services: Provide propagation-based analysis and planning tools for use by Government and others in the planning, procurement, requirements specification, and deployment of advanced spectrally efficient antennas for personal communication services (PCS) and other wireless services.

Broadband Radio: Study and characterize the broadband transmission channel for within-building wireless local area networks. Develop models and radio link simulators.

Interoperability of Public Safety and Criminal Justice Wireless and Information Technology Systems: Develop test methods to ensure interoperability of land mobile radio systems used by Public Safety and Criminal Justice communities. Develop information technology standards that Public Safety and Criminal Justice communities could adopt to ensure interoperability for information sharing.

Private Land Mobile Radio Service Analysis: Provide analysis methods to evaluate new wireless communication systems and to ensure compatible operation between systems to be used by Public Safety, Public Service, and Land Transportation agencies.

International Standards: In cooperation with the U.S. ITU-T National Committee, continue leadership of U.S. Delegations and international committees in ITU-T Study Groups developing technical standards of importance to U.S. industry and Government planners (e.g., ATM, advanced signaling, intelligent networks, third generation wireless, and advanced IP networks) in support of the GII. Submit new and enhanced ITU-T Recommendations on broadband network performance (e.g., ATM, advanced IP networks, GII) and multimedia quality of service (e.g., video telephony, video conferencing) to ITU-T and coordinate their formal review and approval. Prepare and submit new and revised technical information to ITU-R Recommendations on the performance and availability of multimedia services, on improved radio propagation prediction methods, and on propagation measurements and databases.

Domestic Standards: In support of public interest concerns, provide strong leadership and continued technical support to Telecommunications Standards Committee T1. Prepare and coordinate proposed U.S. contributions to ITU-T and ITU-R committees developing new recommendations impacting U.S. telecommunications policy and trade objectives. In cooperation with other T1 participants, develop proposed American National Standards defining broadband network performance and multimedia quality of service measures consistent with those specified in related ITU Recommendations. Prepare and submit technical contributions to TIA standards that define the wireless network interface for satellites providing Internet and ATM-based communication services.

Performance Assessment: Demonstrate NTIA-developed, perception-based audio and video performance assessment tools for critical new areas including Internet multimedia conferencing and advanced television. Document the advances associated with these tools in open-literature publications. Encourage technology transfer to government, industrial, academic, and individual users via NTIA-developed, easy-to-use, portable software toolkit.

Wireless Networks: Perform interoperability and quality assessments of representative wireless network technologies. Spearhead standards committee activities and provide engineering analysis and simulation results defining quantitative limits for adjacent and co-frequency block interference within and among advanced third generation wireless communications technologies.

Department of Commerce
National Telecommunication and Information Administration
Telecommunication Sciences Research
Salaries and Expenses

FY 2001 Budget Initiative
Broadband for the Next Generation Internet

Appropriation: +$2.0 million	Permanent Pos. +10	FTEs: + 10
Reimbursable: 0	Permanent Pos. 0	FTEs: 0

The Broadband/NGI initiative will provide broadband research, standards development, and policy support vital to the successful commercialization and widespread deployment of the Next Generation Internet (NGI) -- including the economical deployment of broadband capabilities in rural and disadvantaged areas.

One of the most remarkable and useful attributes of the Internet has been its ability to integrate fundamentally different services using a common technology platform and customer interface -- and to foster the creation of innovative new services that are made possible by that integration. However, current Internet technology will never efficiently support real-time, toll-quality voice telephony -- which provides a large proportion of today's telecommunication service revenues -- or broadband real-time services such as video teleconferencing, which are expected to contribute strongly to telecommunication service revenues in the future.

A fundamental technology breakthrough is needed to replace (or supplement) the Internet's traditional "best effort" service paradigm with a new resource-sharing paradigm that supports assured Quality of Service (QOS). Early protocols developed to support Internet QOS (e.g., RSVP) have proven to be non-scalable, i.e., too complex and resource-intensive to implement at all routers in a large network. A major technology goal of the Broadband NGI will be to enable the full integration of voice telephony (and broadband real-time services) with existing Internet services by solving the Internet QOS problem. A particular challenge will be to develop QOS solutions that are economical enough to enable deployment of Broadband NGI capabilities in rural and disadvantaged areas.

NTIA will contribute to the realization of these goals in three ways:

1. by applying NTIA-developed, user-oriented performance metrics in assessing and optimizing Broadband NGI QOS assurance technologies;

    - The Institute for Telecommunication Sciences (ITS) has developed, implemented, patented, and standardized technology-independent performance metrics that will be extremely valuable to NGI providers in optimizing Broadband NGI technologies -- and to NGI users in objectively assessing the quality of competing Broadband NGI products and services.

2. by spearheading national and international standardization of QOS classes (and associated signaling mechanisms) to enable negotiation of QOS attributes among Broadband NGI users and service providers;

    - ITS holds key leadership positions and contributes strongly in U.S. industry and international standards committees responsible for negotiating service level agreements that will be crucial to the provision of assured-quality Broadband NGI services on a multi-provider and international basis.

    - In recent work, ITS spearheaded (and coordinated with the IETF) the development and approval of compatible ITU-T and American National Standards (ITU Recommendation I.380 and ANS T1.520) that define a practical set of performance metrics for today's Internet.

3. and by providing direct technical assistance to infrastructure planners in rural and disadvantaged communities that can effectively apply Broadband NGI technologies.

    - ITS has over 20 years experience in telecommunications research, engineering, and standards development directly supporting national security, emergency preparedness, infrastructure protection, and public interest goals. ITS has also demonstrated outstanding network planning expertise in major infrastructure specification and procurement projects for other agency clients.

Competing providers are rarely forthcoming with quantitative performance information that could be used objectively to compare their proposed technology solutions with alternatives. This initiative will enable and encourage such disclosure by providing a technology-independent "common language" for Broadband NGI QOS description. NTIA will reduce the geographical and economic barriers to Broadband NGI availability by promoting economical QOS solutions and a wider range of QOS alternatives in its standards activities, and will advance the application of Broadband NGI capabilities in rural and disadvantaged communities through technical assistance services.

Full deployment and operation of the Next Generation Internet will be a private sector responsibility. The U.S. Government nevertheless must promote and shape the Broadband NGI, both to promote timely development of the enabling technologies and to ensure the widest possible access to its many benefits. NTIA's ITS is uniquely qualified and equipped to undertake this initiative by virtue of its outstanding staff expertise, state-of-the-art laboratory capabilities, collaborative research relationships, existing national and international standards leadership responsibilities, and extensive experience in technical support to network planners.

The Broadband NGI offers a historic opportunity to introduce public interest considerations at an early stage in the development of a new technology that will profoundly affect our society -- perhaps for decades to come. This initiative will greatly enhance NTIA's future effectiveness in promoting policies such as competition, universal service, infrastructure protection, and privacy by introducing the associated technical requirements in Broadband NGI technology forums now.

Performance

Outputs: User-oriented Broadband NGI performance measurement methods; technical publications describing Broadband NGI measurements capabilities and results; optimized wireless/satellite Broadband NGI access capabilities; standards committee leadership and contributions; national/international standards; technical inputs to policy development, evaluation, and promulgation activities; infrastructure assistance to rural and other under served communities.

Outcomes: Rapid commercialization, broad deployment, expanded trade opportunities, and enhanced survivability for Broadband NGI technologies and services. Expanded availability of Broadband NGI capabilities in under served areas.

Exhibit 14

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM CHANGE PERSONNEL DETAIL

Activity: Telecommunication Sciences Research
Program Change: Broadband for the Next Generation Internet

Personnel Title:		Grade	Number	2000 Annual Salary	Total Salaries
Electronics Engineer		15	1	84,207	84,207
Electronics Engineer		14	4	71,587	286,348
Electronics Engineer		13	5	60,580	302,900
Subtotal			10		673,455
Less lapse	0.00%		0		0
Total full-time permanent			10		673,455
2001 Pay Adjustment	3.7%				24,918
					698,373

Personnel Data	
Full-Time Equivalent Employment:	
Full-time permanent	10
Other than full-time permanent	0
Total	10
Authorized Positions:	
Full-time permanent	10
Other than full-time permanent	0
Total	10

Exhibit 15

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: Telecommunication Sciences Research
Program Change: Broadband for the Next Generation Internet

Object Class		2001 Increase
11	Personnel compensation	
11.1	Full-time permanent	698
11.3	Other than full-time permanent	
11.5	Other personnel compensation	
11.9	Total personnel compensation	698
12.1	Civilian personnel Benefits	170
21	Travel and transportation of persons	20
22	Transportation of things	10
23.1	Rental payments to GSA	0
23.2	Rental payments to others	0
23.3	Communications, utilities and misc charges	28
24	Printing and reproduction	13
25.1	Consulting Services	0
25.2	Other Services	25
25.3	Purchase of goods & services from Gov't accounts	50
25.7	Operation and maintenance of equipment	17
26	Supplies and materials	10
31	Equipment	959
99	**Total obligations**	2,000

Department of Commerce
National Telecommunication and Information Administration
Telecommunication Sciences Research
Salaries and Expenses

FY 2001 Budget Initiative
Critical Information Protection
Communications and Information Infrastructure Assurance Program -- Research

Appropriation:	+$2.8 million	Permanent Pos.	+ 5	FTEs:	+ 5
Reimbursable:	0	Permanent Pos.	0	FTEs:	0

The CIIAP research component provides for a program to perform research and technology transfer, and to make policy recommendations for protecting the nation's radio spectrum and telecommunications infrastructure.

The Nation's economic well being is increasingly dependent on communications and information infrastructures that are vulnerable to disruption from hostile acts and natural disasters. Recent episodes such as the rapid spread of the Melissa computer virus have dramatically demonstrated the extent of the consequences when these vulnerabilities are deliberately exploited. The growth of electronic commerce will make the nation's business even more vulnerable.

Communications and information infrastructures are also increasingly at risk from foreign threats of sabotage. The Federal Bureau of Investigation (FBI), National Infrastructure Protection Center (NIPC) reported an increase of attacks against U.S. and NATO unclassified military networks in April 1999 due to pro-Serbian hacker organizations. A Belgrade newspaper reported that in late March a Serbian hacker group called "CRNA RUKA" (Black Hand) attacked a U.S. Navy computer system and threatened further actions. These examples are warning signs of a clear and present danger to U.S. telecommunications networks.

NTIA proposes a cross-cutting budget initiative to conduct essential research and development (R&D) in new technologies to protect the Nation's information and communications infrastructure from deliberate attacks and natural disasters. Research would be conducted by NTIA's Institute for Telecommunication Sciences in collaboration with the Office of Spectrum Management (also NTIA), the National Institute for Standards and Technology, and other Federal telecommunication laboratories and agencies. **This initiative supports the Presidential Decision Directive for Critical Infrastructure Protection (PDD-63).** The proposed program has been fully coordinated with the CIP R&D Interagency Working Group, Information and Communications Subgroup.

PDD-63 calls for a national effort to assure the security of the increasingly vulnerable and interconnected infrastructures of the United States. The directive requires immediate Federal Government action, including risk assessment and planning, to reduce exposure to attack.

Telecommunications is intertwined within all of the critical infrastructures and therefore is a tempting target for terrorists or others who would seek to disrupt the business and government of the United States. An attack against a single telecommunications network can cause economic damages far in excess of the network's value alone, because it can disrupt financial, transportation, energy, and other sectors. The same attack also could cripple the communications capabilities of law enforcement and emergency services organizations charged with responding to such an event.

As the Lead Agency for the Information and Communications sector of the President's CIP Program, NTIA will be in the forefront of coordinating both government and private industry responses to this challenge. As the custodian of the nation's radio spectrum and the manager of all Government frequency assignments, NTIA has a clear need for accurate, objective information about the radio frequency infrastructure vulnerabilities and methods for protecting the spectrum. As the Executive Branch's policy advisor for all telecommunications issues, NTIA has an obligation to understand the risks to infrastructure, and to formulate policy and encourage standards to mitigate these risks.

Responding to the President's directive, NTIA will address both physical and cyber threats to the Public Telecommunications Network (PTN) and the Internet. Areas of research addressed here include Intrusion Monitoring and Detection, Vulnerability Assessment and Systems Analysis, Protection and Mitigation, and Incident Response and Recovery. NTIA's scientific laboratory, the ITS, is well equipped by its mission, history, staff, location, and facilities to study these technical questions and produce practical solutions.

These areas require original research and new analysis tools and techniques unavailable today. The Institute would act as a catalyst by developing needed technical tools and engineering support for effective technology transfer to other Federal agencies, state and local governments, and private industry.

This initiative would be cross-cutting within NTIA as well, combining its efforts to examine vulnerabilities of the nation's radio spectrum infrastructure, studying technical solutions, and making policy recommendations based on the conclusions.

NTIA will develop cooperative activities with industry and with several Government agencies (e.g., FCC, NCS, NIST, NSA) to systematically identify and assess vulnerabilities of emerging NII architectures and the radio spectrum infrastructure. Analysis methods and tools developed would be shared with other agencies. In addition, the program outputs would be useful to the Interdepartmental Radio Advisory Committee (IRAC) in preparing coordinated plans to support PDD-63.

NTIA has been and continues to be an active and integral member of the CIP R&D IWG. NTIA chairs the Information & Communications (I&C) Subgroup, which coordinates all Federal R&D efforts for the President's CIP Program. The goals, proposed research, and funding levels for this initiative have all been endorsed by the I&C Subgroup member.

Performance

NTIA will first apply these research and engineering resources to identify, evaluate, and implement telecommunication system and network enhancements that respond to a wide range of infrastructure vulnerabilities, including both design weaknesses and external threats, such as physical and cyber attacks. NTIA will undertake cooperative efforts with industry and with Government agencies (e.g., FCC, NCS, NIST, NSA) to systematically identify and assess these and other vulnerabilities of emerging NII/GII architectures. Based on these assessments, NTIA will develop and test an array of network reliability enhancement techniques. Results will be presented in industry and Government fora responsible for developing and promulgating policies and standards for network management and interoperability. Research products will consist of network planning, simulation, and performance assessment tools and technical analyses, conference presentations, workshops, reports, and standards contributions that will enhance U.S. telecommunications infrastructure reliability and restoration. As an integral part of these efforts, NTIA will work with NIST to conduct a coordinated research program where NTIA will address threats to the Nation's information and communications infrastructure and NIST will address computer security and metrology issues.

Exhibit 14

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM CHANGE PERSONNEL DETAIL

Activity: Telecommunication Sciences Research
Program Change: Critical Infrastructure Protection (Research)

Personnel Title:		Grade	Number	2000 Annual Salary	Total Salaries
Electronics Engineer		14	1	71,954	71,954
Electronics Engineer		13	1	60,890	60,890
Electronics Engineer		12	1	51,204	51,204
Electronics Engineer		11	2	42,724	85,448
Subtotal			5		269,496
Less lapse	0.00%		0		0
Total full-time permanent			5		269,496
2001 Pay Adjustment	3.7%				9,971
					279,467

Personnel Data	
Full-Time Equivalent Employment:	
Full-time permanent	5
Other than full-time permanent	0
Total	5
Authorized Positions:	
Full-time permanent	5
Other than full-time permanent	0
Total	5

Exhibit 15

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: Telecommunication Sciences Research
Program Change: CIIAP -- Research

Object Class		2001 Increase
11	Personnel compensation	279
11.1	Full-time permanent	
11.3	Other than full-time permanent	
11.5	Other personnel compensation	
11.9	Total personnel compensation	279
12.1	Civilian personnel Benefits	74
21	Travel and transportation of persons	36
22	Transportation of things	0
23.1	Rental payments to GSA	0
23.2	Rental payments to others	0
23.3	Communications, utilities and misc charges	0
24	Printing and reproduction	20
25.1	Consulting Services	0
25.2	Other Services	2,000
25.3	Purchase of goods & services from Gov't accounts	0
25.7	Operation and maintenance of equipment	5
26	Supplies and materials	55
31	Equipment	331
99	**Total obligations**	2,800

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class		1999 Actual	2000 President's Budget	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
11	Personnel compensation					
11.1	Full-time permanent	$5,653	$6,149	$6,520	$8,554	$2,034
11.3	Other than full-time permanent	112	260	260	260	0
11.5	Other personnel compensation	216	20	20	20	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	**Total personnel compensation**	5,981	6,429	6,800	8,834	2,034
12.1	Civilian personnel benefits	1,198	1,463	1,493	2,012	519
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	351	319	342	798	456
22	Transportation of things	10	16	16	28	12
23.1	Rental payments to GSA	685	1,068	1,090	1,308	218
23.2	Rental payments to others	0	13	13	13	0
23.3	Communications, utilities and miscellaneous charges	94	333	337	409	72
24	Printing and reproduction	56	130	134	194	60
25.1	Advisory and assistance services	1	263	263	263	0
25.2	Other services	653	29	61	3,386 *	3,325
25.3	Purchases of goods and services from Government accounts	1,894	279	249	971 *	722
25.7	Operation and maintenance of equipment	229	214	214	250	36
26	Supplies and materials	157	194	197	227	30
31	Equipment	178	203	206	1,622	1,416
41	Grants, subsidies and contributions	0	0	0	0	0
99	**TOTAL OBLIGATIONS**	11,487	10,953	11,415	20,315	8,900

* Numbers have been updated since MAX data was input

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Personnel Data	1999 Actual	2000 President's Budget	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	90	96	96	127	31
Other than full-time permanent	0	0	0	0	0
Total	90	96	96	127	31
Authorized Positions:					
Full-time permanent	98	98	98	129	31
Other than full-time permanent	0	0	0	0	0
Total	98	98	98	129	31

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class		2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
11	Personnel compensation				
11.1	Full-time permanent				
	Executive level	$0	$131	$131	$0
	Senior Executive Level	0	1,162	1,282	120
	General schedule	371	5,227	7,141	1,914
	Subtotal	371	6,520	8,554	2,034
11.3	Other than full-time permanent				
	General schedule	0	260	260	0
	Subtotal	0	260	260	0
11.5	Other personnel compensation				
	Cash awards	0	20	20	0
	Other	0	0	0	0
	Subtotal	0	20	20	0
11.8	Special personnel services payments				
	Other	0	0	0	0
	Subtotal	0	0	0	0
11.9	Total personnel compensation	371	6,800	8,834	2,034
12.1	Civilian personnel benefits				
	Civil service retirement	(1)	271	271	0
	Federal employees' retirement	1	455	671	216
	Thrift savings plan	0	75	116	41
	Federal insurance contribution act - Medicare	0	95	125	30
	Federal insurance contribution act - OASDI	6	231	352	121
	Health insurance	34	341	448	107
	Life insurance	0	16	20	4
	Employees' compensation fund	(10)	9	9	0
	Other	0	0	0	0
	Subtotal	30	1,493	2,012	519

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class		2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
13	Benefits for former personnel				
	Other	$0	$0	$0	$0
	Subtotal	0	0	0	0
21	Travel and transportation of persons				
	Common carrier	5	121	346	225
	Per diem/actual	18	210	441	231
	Other	0	11	11	0
	Subtotal	23	342	798	456
22	Transportation of things	0	16	28	12
23.1	Rental payments to GSA	22	1,090	1,308	218
23.2	Rental payments to others	0	13	13	0
23.3	Communications, utilities and miscellaneous charges				
	Rental of ADP equipment	4	135	170	35
	Rental of office copying equipment	0	42	42	0
	Other equipment rental	0	9	9	0
	Federal telecommunications system	0	66	86	20
	Other telecommunications services	0	65	82	17
	Postal Service by USPS	0	20	20	0
	Other	0	0	0	0
	Subtotal	4	337	409	72
24	Printing and reproduction				
	Publications	0	0	10	10
	Other	4	134	184	50
	Subtotal	4	134	194	60

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class		2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
25.1	Advisory and assistance services				
	Management and professional support services	$0	$263	$263	$0
	Studies, analyses, and evaluation	0	0	0	0
	Engineering and technical services	0	0	0	0
	Subtotal	0	263	263	0
25.2	Other services				
	Training				
	University	0	0	0	0
	Other	25	32	32	0
	Other non-government contracts	7	29	3,354	3,325
	Other	0	0	0	0
	Subtotal	32	61	3,386 *	3,325
25.3	Purchases of goods and services from Government accounts	0	(336)	(216)	120
	Maintenance of equipment	0	9	9	0
	Payments to GA, WCF	(30)	576	1,178	602
	Subtotal	(30)	249	971 *	722
25.7	Operation and maintenance of equipment	0	214	250	36
26	Supplies and materials				
	Office supplies	3	97	112	15
	ADP supplies	0	100	115	15
	Other	0	0	0	0
	Subtotal	3	197	227	30

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class		2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
31	Equipment				
	Office machines and equipment	$3	$74	$74	$0
	ADP hardware/software	0	32	1,448	1,416
	Equipment depreciation	0	100	100	0
	Other	0	0	0	0
	Subtotal	3	206	1,622	1,416
41	Grants, subsidies and contributions	0	0	0	0
99	**TOTAL OBLIGATIONS**	462	11,415	20,315	8,900

* Numbers have been updated since MAX data was input.

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
APPROPRIATIONS LANGUAGE AND CODE CITATIONS

For necessary expenses, as provided for by law, of the National Telecommunications and Information Administration (NTIA), $20,315,000, to remain available until expended: Provided, That notwithstanding 31 U.S.C. 1535(d), the Secretary of Commerce shall charge Federal agencies for costs incurred in spectrum management, analysis and operations, and related services and such fees shall be retained and used as offsetting collections for costs of such spectrum services, to remain available until expended: Provided further, That hereafter, notwithstanding any other provision of law, NTIA shall not authorize spectrum use or provide any spectrum functions pursuant to the NTIA Organization Act, 47 U.S.C. 902- 903, to any Federal entity without reimbursement as required by NTIA for such spectrum management costs, and Federal entities withholding payment of such cost shall not use spectrum: Provided further, That the Secretary of Commerce is authorized to retain and use as offsetting collections all funds transferred, or previously transferred, from other Government agencies for all costs incurred in telecommunications research, engineering, and related activities by the Institute for Telecommunication Sciences of the NTIA, in furtherance of its assigned functions under this paragraph, and such funds received from other Government agencies shall remain available until expended.

15 U.S.C. § 1512
15 U.S.C. § 1532
47 U.S.C. § 305
47 U.S.C. § 606
47 U.S.C. § 701, et. seq., §§ 721, 744
47 U.S.C. § 902

15 U.S.C. § 1512 authorizes the Secretary of Commerce to foster, promote and develop foreign and domestic commerce. Associated Executive Orders set forth the functions of the United States Advisory Council on the National Information Infrastructure (NII) whose members are appointed by the Secretary of Commerce. The Council advises the Secretary on matters related to and strategy for promoting the development of the NII.

15 U.S.C. § 1532 authorizes the Secretary of Commerce to conduct research and analysis in all telecommunications sciences; to investigate the transmission of radio waves and electromagnetic radiation; and to compile, evaluate, publish, and distribute related information.

47 U.S.C. § 305 authorizes the President to assign frequencies to radio stations or classes of radio stations belonging to and operated by the United States. Originally delegated to the Department of Commerce by Executive Order 12046, as later codified in the National Telecommunications and Information Administration Organization Act, 47 U.S.C. § 901, et. seq.

47 U.S.C. § 606 and associated Executive Orders authorize the President to perform certain telecommunications emergency functions essential to security and the national defense.

47 U.S.C. § 701 et. seq., establishes, in cooperation with other countries, a commercial communications satellite system. Sections 721 and 744 authorize the President to perform certain functions related to the planning and development of a national program for the establishment and operation of the commercial communications satellite system.

47 U.S.C. § 902(b)(3) assigns to NTIA the performance of functions related to the Communications Satellite Act.

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
ADVISORY AND ASSISTANCE SERVICES
(Dollar amounts in thousands)

	1999 Actual	2000 Estimate	2001 Estimate
Management and Professional Support Services	$ 1	$ 263	$ 263
Studies, Analysis & Evaluations	0	0	0
Engineering & Technical Services	0	0	0
Total	$ 1	$ 263	$ 263

Management & Professional Support Services:

NTIA utilizes consultants throughout its programs to provide scientific or technical expertise in specialized areas.

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PERIODICALS, PAMPHLETS AND AUDIOVISUAL PRODUCTS
(Dollar amounts in thousands)

	1998 Actual	1999 Actual	2000 Estimate	2001 Estimate
Periodicals	$ 0	$ 0	$ 0	$ 0
Pamphlets	28	0	5	5
Audiovisual Products	3	0	0	0
Total	$ 31	$ 0	$ 5	$ 5

NTIA utilizes pamphlets to provide an overview of NTIA programs and services to the public.

Exhibit 36

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
AVERAGE GRADE AND SALARIES

	1999 Actual	2000 Estimated	2001 Estimated
Direct:			
Average ES Salary	$119,680	$124,444	$129,298
Average Career Path Salary	$64,721	$68,561	$71,235
Average GS Grade	12.2	12.2	12.3
Average GS Salary	$56,534	$58,058	$61,061

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations
Appropriation available, FY 2000	13	13	$26,500	$27,015
less: Obligations from prior years	0	0	0	(515)
plus: 2001 adjustments to base	0	0	75	75
2001 Base	13	13	26,575	26,575
plus: 2001 program changes	11	8	83,500	83,500
2001 Estimate	24	21	110,075	110,075

Comparison by activity/subactivity		1999 Actual		FY 2000 Currently Available		2001 Base		2001 Estimate		2001 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Public Telecommunications Facilities, Planning and Construction											
Grants	Pos/BA	0	$19,200	0	$24,700	0	$24,700	0	$106,000	0	$81,300
	FTE/Obl.	0	21,735	0	25,084	0		0		0	
Program management	Pos/BA	13	1,800	13	1,800	13	1,875	24	4,075	11	2,200
	FTE/Obl.	12	1,856	13	1,931	13		21		8	
TOTALS	Pos/BA	13	21,000	13	26,500	13	26,575	24	110,075	11	83,500
	FTE/Obl.	12	23,591	13	27,015	13		21		8	
Adjustments to Obligations											
Recoveries			(961)				0		0		0
Unobligated Balance, start of year			(2,145)		(515)		0		0		0
Unobligated balance transferred			0		0		0		0		0
Unobligated Balance, end of year			515		0		0		0		0
Unobligated balance expiring			0		0		0		0		0
Financing from transfers:											
Transfer from other accounts (-)			0		0		0		0		0
Transfer to other accounts (+)			0		0		0		0		0
Appropriation			21,000		26,500		26,575		110,075		83,500

Exhibit 7

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
SUMMARY OF FINANCING
(Dollar amounts in thousands)

Comparison by activity	FY 1999 Actual	FY 2000 Currently Available	FY 2001 Base	FY 2001 Estimate	2001 Increase/ (Decrease)
Total Obligations	**$23,591**	**$27,015**	**$26,575**	**$110,075**	**$83,500**
Offsetting collections from:					
Federal funds	0	0	0	0	0
Non-Federal sources 1/	0	0	0	0	0
Recoveries	(961)	0	0	0	0
Unobligated balance, start of year	(2,145)	(515)	0	0	0
Unobligated balance transferred	0	0	0	0	0
Unobligated balance, end of year	515	0	0	0	0
Unobligated balance expiring	0	0	0	0	0
Budget Authority	**21,000**	**26,500**	**26,575**	**110,075**	**83,500**
Financing:					
Transferred from other accounts (-)	0	0	0	0	0
Transferred to other accounts (+)	0	0	0	0	0
Appropriation	**21,000**	**26,500**	**26,575**	**110,075**	**83,500**

1/ Non-Federal users of the Telecommunications Analysis (T.A) Services program.

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
ADJUSTMENTS TO BASE

Adjustments to Base	Positions	FTE	Amount ($000)
TRANSFER			
Working Capital Fund transfer to GA for security	0	0	(12)
COST CHANGES			
Full-year cost of FY 2000 pay increase and related costs	0	0	15
FY 2001 pay raise	0	0	36
Full-year cost in 2001 of positions financed for part-year in 2000	0	0	0
One less compensable day	0	0	(4)
Within-grade step increases	0	0	2
Civil Service Retirement System (CSRS)	0	0	(16)
Federal Employees Retirement System (FERS)	0	0	20
Thrift Savings Plan	0	0	4
Federal Insurance Contribution Act (FICA) - OASDI	0	0	12
Health Insurance	0	0	4
Travel: Per Diem	0	0	2
Rental payments to GSA	0	0	2
Printing and reproduction	0	0	1
Working Capital Fund	0	0	5
General Pricing Level Adjustment			
Other services	0	0	4
Subtotal, Other Changes	0	0	87
Total, Adjustments to Base	0	0	75

Department of Commerce

National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
JUSTIFICATION OF ADJUSTMENTS TO BASE

Adjustments to Base		Positions	FTE	Amount ($000)
TRANSFER				
Departmental Working Capital Fund transfer to General Administration of $12,000 for security costs.		0	0	(12)
COST CHANGES				
Pay Raises		0	0	51
Full-year cost of FY 2000 pay increase and related costs				
The FY 2000 President's budget assumes a pay raise of 4.4 percent to be effective January 1, 2000.				
Total cost in FY 2001 of FY 2000 pay increase	46,000			
Less amount funded in FY 2000	(32,000)			
Amount requested in 2001 to provide cost of 2000 pay raise	14,000			
Less amount absorbed in FY 2000	1,000			
Total, FY 2000 pay raise increase in FY 2001	15,000			
FY 2001 pay increase and related costs				
A general pay raise of 3.7 percent is assumed to be effective January 1, 2001.				
Total cost in FY 2001 pay increase	30,000			
Less amount absorbed in FY 2001	0			
Amount requested in FY 2001 pay increase	30,000			
Payment to Working Capital Fund	6,000			
Total adjustment for FY 2001 pay increase	36,000			
Within-grade step increases		0	0	2
An increase of $2,102 is required to cover the cost of within-grade step increases. This estimate reflects the net cost of step increases which will be earned in FY 2001.				
Estimated number of within-grade step increases	3			
Step increases not earned due to turnover (23.2 x 3)	1			
Average step above step 1 per separation	2			
Average cost per within-grade step increase	1,793			
Gross cost of scheduled step increases ($1,793 x 80)	5,379			
Less savings due to separations ($1,793 x 1 x 2)	(3,586)			
Subtotal, personnel compensation	1,793			
Benefits	309			
Total adjustment to base	2,102			

Department of Commerce

National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
JUSTIFICATION OF ADJUSTMENTS TO BASE

Adjustments to Base		Positions	FTE	Amount ($000)
Civil Service Retirement System (CSRS)				
The number of employees covered by CSRS continues to drop as positions become vacant and are filled by employees who are covered by the Federal Employees' Retirement System (FERS). The estimated percentage of payroll for employees covered by CSRS will drop from 51.1 percent in FY 2000 to 30.9 percent in FY 2001. The contribution rate will remain at 8.5 percent.				
FY 2001 ($920,000 x .309 x .0851)	24,192			
FY 2000 ($920,000 x .511 x .0851)	40,007			
Total adjustment to base	(15,815)			
Federal Employees Retirement System (FERS)		0	0	20
The number of employees covered by FERS continues to rise as employees covered by CSRS leave and are replaced by employees covered by FERS. The estimated percentage of payroll for employees covered by FERS will rise from 48.9 percent in FY 2000 to 69.1 percent in FY 2001. The contribution rate will remain 10.7 percent.				
FY 2001 ($920,000 x .691 x .107)	68,022			
FY 2000 ($920,000 x .489 x .107)	48,137			
Total adjustment to base	19,885			
Thrift Savings Plan (TSP)				
The cost of NTIA's contributions to the Thrift Savings Plan will also rise as FERS participation increases. The contribution rate is expected to remain 2 percent.		0	0	4
FY 2001 ($920,000 x .691 x .02)	12,714			
FY 2000 ($920,000 x .489 x .02)	8,998			
Total adjustment to base	3,716			
Federal Insurance Contribution Act (FICA)		0	0	12
As the percentage of payroll covered by FERS rises, the cost of OASDI contributions will increase. In addition, the maximum salary subject to OASDI tax will rise from $73,275 in FY 2000 to $78,450 in FY 2001. The OASDI tax rate will remain 6.2 percent.				
Regular Employees				
FY 2001 ($920,000 x .691 x .946 x .062)	37,286			
FY 2000 ($920,000 x .489 x .922 x .062)	25,717			
Increase for FY 2001	11,569			
Other Salaries				
FY 2001 ($38,000 x .691 x .946 x .062)	1,466			
FY 2000 ($38,000 x .489 x .922 x .062)	1,429			
Increase for FY 2001	37			
Total adjustment to base	11,606			

Department of Commerce

National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
JUSTIFICATION OF ADJUSTMENTS TO BASE

Adjustments to Base	Positions	FTE	Amount ($000)
Health Insurance Effective January 1999, NTIA's contribution to Federal employees' health insurance premiums increased by 11.0 percent. This represents an increase of $4,070 over the FY 2000 estimate of $37,000.	0	0	4
One Less Compensable Day The decreased cost of one less compensable day in FY 2001 compared to FY 2000 is calculated by dividing the 2000 estimated personnel compensation ($920,000) and applicable benefits ($190,000) by 261 compensable days. The decreased cost of one less compensable day is ($4,111).	0	0	(4)
Travel Effective January 1999, the General Services Administration raised per deim rates. This increase resulted in a 5.3 percent increase to NTIA. This percentage was applied to the FY 2000 estimate of $25,000. An additional $1,000 is requested to cover the cost of purchasing airline tickets in contracting with a travel agency under the new travel system.	0	0	2
Rental payments to GSA GSA rates are projected to increase 2.1 percent in FY 2001. This percentage was applied to the FY 2000 estimate of $85,000 to arrive at an increase of $1,452.	0	0	2
GPO Printing GPO has provided an estimated rate increase of 3.3 percent. This percentage was applied to the FY 2000 estimate of $21,000 to arrive at an increase of $693.	0	0	1
Working Capital Fund An additional amount of $5,000 is required to fund cost increases in the Departmental Working Capital Fund	0	0	5
General Pricing Level Adjustment This request applies 1.5 percent based on OMB economic assumptions for FY 2001 to subobject classes where the prices that the Government pays are established through the market system. Factors are applied to other services ($4,000).	0	0	4
Total, Adjustments to Base	0	0	91

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: Public telecommunications, facilities, planning and construction
Subactivity: Grants and program management

Comparison by line item		1999 Actual		FY 2000 Currently Available		2001 Base		2001 Estimate		2001 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Grants.....	Pos/BA	0	$19,200	0	$24,700	0	$24,700	0	106,000	0	$81,300
	FTE/Obl.	0	21,735	0	25,084	0		0		0	
Program management.....	Pos/BA	13	1,800	13	1,800	13	1,875	24	4,075	11	2,200
	FTE/Obl.	12	1,856	13	1,931	13		21		8	
Direct Obligations.....	Pos/BA	13	21,000	13	26,500	13	26,575	24	110,075	11	83,500
	FTE/Obl.	12	23,591	13	27,015	13		21		8	

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
Justification of Program Performance

Goal Statement

Under the Public Telecommunications Facilities Program (PTFP), NTIA provides matching grants to assist in the planning and construction of public telecommunications facilities. PTFP grants achieve three Congressionally mandated objectives: (1) extend delivery of public telecommunications services to as many Americans as possible by the most effective and efficient means; (2) increase public telecommunications services and facilities available to, operated by and owned by minorities and women; and (3) strengthen the capability of existing public broadcasting stations.

Through the enactment of appropriations over the last 35 years, the Administration and Congress have supported the development of a broad based public telecommunications infrastructure to serve the American people. This program has enabled Americans to access quality public television and radio service. Over $500 million has been invested in this manner to ensure over 90% coverage of public television and public radio and to support key distance learning projects. PTFP must continually meet the challenges raised by the need to reach under served populations, assure adequate equipment to keep stations on the air, promote innovative applications of technology for public telecommunications, and ensure that new technological developments are taken into account in funding decisions.

The Federal Communications Commission (FCC) has mandated that all public television stations begin digital broadcasts by May 2003. As part of this budget proposal, NTIA will assist public television stations to fulfill this mandate in conformance with Administration policies, Congressional directives, and FCC regulations. Since 1998, NTIA has been assisting the very first public broadcast stations as they make an orderly transition to digital broadcasting. Public television's transition to digital broadcasting will meet the FCC's requirements as well as strengthen the capability and service provided by existing public broadcasting stations. NTIA will support the FCC's digital conversion mandate while continuing to ensure the availability of current public telecommunications services.

Proposed Legislation

Legislation to authorize appropriations for the continuation of this program.

Base Program

Explanation and Justification

Introduction: The PTFP has been successful in providing facilities that have given millions of Americans access to the educational and cultural programming of public broadcasting. NTIA and its predecessor agencies have assisted noncommercial entities throughout the United States and its territories to acquire the necessary hardware to produce and broadcast public television and radio programs. NTIA also supports the delivery of instructional and educational services by a broad array of community agencies. In addition to the $500 million in Federal funds that have been invested in the public broadcasting infrastructure, local communities have provided upward of another $500 million dollars to match the Federal grants.

Assist Public Broadcastings' Transition to Digital: Public broadcasting stations will be undertaking an enormous new financial burden as they transition to the digital format. The Office of Management and Budget estimates that over $700 million is needed so the nation's approximately 350 public television stations will be able to meet the FCC's minimum digital broadcast requirements. The costs of conversion will place an enormous strain on the already precarious budgets of many of the public broadcasting stations. Federal assistance is needed during this transition period. For almost half the public television licensees, the cost of conversion to digital is projected to exceed their annual revenues. If stations are forced to convert without assistance, many stations will be forced to go off the air or reduce hours of operation, programming quality, and diversity.

These efforts are part of the President's program to ensure that the benefits of public broadcasting continue for all of our citizens. Under the timetable adopted by the FCC in conformity with the Balanced Budget Act of 1997, spectrum used for analog television broadcasts will be auctioned in 2002, and all analog television broadcasts will cease in 2006. The conversion of approximately 350 public television stations to digital technology must be phased in over several years in order to meet the FCC's 2003 deadline.

PTFP will award merit-based, competitive grants to strengthen the capacity of existing public broadcasting stations. The grants issued will allow stations to convert from analog to digital formats, provide incentives for more efficient operations and allow broadcasting stations to meet the requirements and deadlines for digital conversion as specified by the FCC. The primary emphasis will be projects to install basic digital transmission capacity. NTIA, working with the Corporation for Public Broadcasting (CPB), will be able to meet the urgent financial needs of broadcasting stations during the transition to digital broadcasting.PTFP will take special measures to assure that the full potential of the new digital technology is used to provide the most economical means possible of providing public broadcasting services. Special consideration will be given to stations broadcasting in under served markets, especially those in rural, remote or disadvantaged communities.

Maintain the Existing Infrastructure and Extend Service: The Administration must also ensure that the base infrastructure for public broadcasting stays intact. Over 250 million people have access to public television and over 200 million people have access to public radio. The value of the imbedded infrastructure for public broadcasting is in excess of $2 billion. Although public broadcasting stations in more affluent areas have been successful in replacing equipment, stations in less affluent, rural and remote areas suffer a gap in available funds that only the Federal Government can fill. For many stations federal funding is used to replace the most urgent basic equipment needed to keep a station on the air. All PTFP equipment grants are matched with local funds which multiply the program's impact and indicate local commitment.

PTFP also must provide funds to those communities that still have no access to a public broadcasting signal. The excellent services offered by public broadcasters are not available to tens of millions of our citizens. Educational and cultural opportunities can be enhanced by the provision of public broadcasting signals. PTFP works with the unserved communities in bringing a signal to their area. These communities are often remote and rural and with no other way to receive the services offered over the public airwaves.

NTIA also has found that several technologies can be appropriate to provide valuable educational and cultural services to a community. The use of narrowband technologies is appropriate to bring certain types of educational services to a community. Often, these alternative services are cost effective for their intended audiences and targeted to reach a select community. For 20 years PTFP has funded innovative projects that provide distance learning and other education services not ordinarily met through normal public broadcasting signals. These projects are often regional or national in scope and use technologies that reach audiences across the country.

PTFP also provides important seed funding for public telecommunications services used by the blind and the hearing impaired. Although the number of these projects is usually small, their impact is of utmost significance to this severely under served population.

Strategic Intent

This program fulfills the goal of NTIA's Strategic Plan to advance the public interest in telecommunications, mass media, and information. Congress has mandated that public broadcasting should be available to all Americans. It is a free, non-commercial, educational, cultural and public service available to all citizens in their homes, offices and cars, in rural as well as urban areas. Funding this program continues to be an efficient way to meet this goal. Public broadcasting is also a service that has made a conscious, sustained effort to reach out to the needs of the traditionally unserved populations of the Nation. Funding for public television's transition to digital also fulfills a Congressional mandate that all television stations in the United States convert to digital broadcast technologies and that the current analog frequencies used by conventional television stations be auctioned in 2002 and returned in 2006.

NTIA's Strategic Plan also includes the goal of promoting the availability and sources of advanced telecommunications and information services. Digital broadcasting has the potential of bringing a truly vast array of new communications services into the home. For example, digital television (DTV) provides a natural communications route for the transmission of data and interactive information services. Also, DTV's multicasting potential permits diverse services to be delivered to the home as well as schools and other public service institutions simultaneously. Digital broadcasting, therefore, stands to assume a central place in the evolution of the National Information Infrastructure. NTIA funding for public broadcasting's demonstration of the applications of digital technologies represents a significant step in the achievement of this strategic goal.

Statement of Operating Objectives

Assist Public Broadcastings' Transition to Digital: PTFP's digital conversion funds will assist public broadcasters as they transition from analog to digital broadcasting. NTIA will promote core digital transmission capabilities through a merit- and need-based allocation of funds for base equipment. Based on past experience, the majority of all equipment requests before the program will be digitally related. The FY 2001 base program funding available through PTFP will allow approximately 20 stations to transition to digital. PTFP will also fund projects that demonstrate innovative uses of digital technology. The demonstration funds will be awarded to stations or public telecommunications systems that demonstrate urgent equipment needs or encourage efficiencies in the public broadcasting system.

Maintain the Existing Infrastructure and Extend Service: As directed in the program's legislation, NTIA will continue to fund those projects which will maintain the current public broadcasting infrastructure including those projects that result from emergency situations. PTFP will give high priority to projects that bring signals to areas of the country that do not now receive a public broadcasting signal. Distance learning projects that adopt innovative techniques and that serve unique audiences will be considered for funding. Projects that assist the blind and hearing impaired will be encouraged to ensure that they participate fully in the benefits of telecommunications.

Department of Commerce
National Telecommunication and Information Administration
Public Telecommunications Facilities, Planning and Construction

FY 2001 Budget Initiative
Public Broadcasting's Digital Conversion

Appropriation:	Permanent Pos.	FTEs:
+$83.5 million	+ 11	+ 8

Assist public broadcasting stations in complying with the federal mandate for a nationwide conversion from analog to digital broadcasting signals.

For 35 years, the Public Telecommunications Facilities Program (PTFP) has played a major role in the development of public broadcasting facilities throughout the United States and its territories. The PTFP has been successful in providing facilities that have given millions of Americans access to the educational and cultural programming of public broadcasting. Over $500 million in Federal matching funds has been invested in the public broadcasting component of the program, leveraging another $500 million from local communities to match the Federal grants.

Public broadcasting stations must now respond to a Congressional mandate that all television stations in the United States convert to digital broadcast technologies. In April 1997, the Federal Communications Commission mandated that all public television stations must convert to digital broadcast technologies by May 2003. According to the current timetable, current analog frequencies now used by television stations will be auctioned by the Government in 2002. Accordingly, stations are undertaking an enormous new financial burden as they transition to the digital format. The Office of Management and Budget estimates that over $700 million is needed for the nation's approximately 350 public television stations to meet the FCC's minimum digital broadcast requirements. The conversion will place an enormous strain on the already precarious budgets of many of the public broadcasting stations. Financial assistance will, therefore, be needed during this transition period. For almost half the public television licensees, the cost of conversion to digital is projected to exceed their annual revenues. If stations are forced to convert without assistance, many stations will be forced to go off the air or reduce hours of operation, programming quality, and diversity.

This initiative is part of the President's program to ensure that the benefits of public broadcasting continue for all our citizens. Under the timetable adopted by the FCC to meet the Congressional mandates of the Balanced Budget Act of 1997, all public television stations must begin broadcasting a digital signal by May 2003. The conversion of approximately 350 public television stations to digital technology must be accomplished within the next three years. State and local governments and community non-profit organizations will require several years to raise the local funds and complete equipment installation necessary to pass through a digital signal. The $83.5 million increase in digital conversion funds requested under this initiative will provide funding to dramatically expand the level of support available under the base program. These funds will assist many of the nation's public television stations to broadcast a digital signal.

NTIA estimates that only twelve public TV stations were broadcasting in digital as of December 1999. NTIA's estimates that it will be able to support another two dozen stations with funding appropriated to the PTFP for the FY 1999 and FY 2000 PTFP grant cycles. This would mean that over 300 stations remain in need of financial assistance. When combined with PTFP's base program, which would assist approximately 20 stations, the FY 2001 PTFP initiative would allow the program to assist approximately 120 public TV stations, in total, to purchase the diverse transmission and distribution equipment they will need to transmit a digital signal as required by the FCC by 2003. As such, the initiative is part of a larger Administration proposal that would, over the next three years, help the greater number of America's public television stations to complete this complicated and expensive conversion.

Under this initiative, PTFP will assist in the digital transition of public television stations through competitive grant awards to strengthen the capacity of existing public television stations. PTFP will take special measures to assure that the full potential of the new digital technology is used to provide the most economical means possible of providing public broadcasting services. The grants issued will allow stations to convert from analog to digital formats, provide incentives for more efficient operations, and provide some of the resources necessary for broadcasting stations to meet the requirements and deadlines for digital conversion. Special consideration will be given to stations broadcasting in under served markets, especially those in rural and disadvantaged communities. With the new funds NTIA, working with the Corporation for Public Broadcasting, will be able to meet some of the urgent financial needs of public television stations during the transition to digital broadcasting.

PTFP will help public television stations acquire basic transmission equipment required to broadcast a digital television signal from national programming sources as well as have the ability to provide digital broadcast of local productions which meet community needs. The financial assistance proposed under this initiative will assist public television stations in their efforts to meet the FCC's mandated deadline to broadcast a digital signal by May 2003. The initiative will also permit enhanced public television services through digital television's ability to broadcast multiple program channels and program-related data for instructional uses. Digital conversion will ensure continued universal access to public television services as broadcasters will be required to return their analog spectrum to the Federal Government in 2006.

Strategic Intent

Advancing the public interest in telecommunications, mass media, and information is one of NTIA's strategic goals. This initiative helps to fulfill a Congressional mandate that all television stations in the United States convert to digital broadcast technologies and that the current analog frequencies used by conventional television stations be returned for Government auction in 2002.

NTIA's Strategic Plan also includes the goal of promoting the availability and sources of advanced telecommunications and information services. Digital broadcasting has the potential of bringing a truly vast array of new communications services into the home. For example, digital television (DTV) provides a natural communications route for the transmission of data and interactive information services. Also, DTV's multicasting potential permits diverse services to be delivered to the home as well as schools and other public service institutions simultaneously. Digital broadcasting, therefore, stands to assume a central place in the evolution of the National Information Infrastructure. NTIA funding for public broadcasting's demonstration of the applications of digital technologies represents a significant step in the achievement of this strategic goal.

Operating Objectives

NTIA will promote core digital transmission capabilities through a merit- and need-based allocation of funds for base equipment. With the $83.5 million proposed in this initiative, PTFP will be able to assist approximately 100 additional stations, for a total of 120 stations, with the purchase of base transmission and distribution equipment during FY 2001. PTFP will also fund projects that demonstrate innovative uses of digital technology. The demonstration funds will be awarded to stations or public telecommunications systems that demonstrate urgent equipment needs or encourage efficiencies in the public broadcasting system.

Under the base program, PTFP will continue its traditional support to expand the availability of public broadcasting services to those areas without such service. PTFP also will assist public radio and television stations in being able to continue providing their existing services through current analog broadcast technology.

Funding of this Presidential initiative will help to ensure that the significant Federal investment in public broadcasting is preserved and that the public has continued access to the educational and cultural programs that air on public broadcasting.

Performance

Output:	2001 Estimate	2002 Estimate	2003 Estimate
• Digital conversion projects awarded (Base program and initiative)	120	110	95

Outcomes:

- Percentage of public television stations that have digital transmission capability
- Universal public television service will continue in rural and disadvantaged communities as a result of these grants

Exhibit 14

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities Planning and Construction
PROGRAM CHANGE PERSONNEL DETAIL

Activity: Public Telecommunications Facilities, Planning and Construction
Program Change: Public Telecommunications Facilities, Planning and Construction

Personnel Title:		Grade	Number	2000 Annual Salary	Total Salaries
Digital Broadcasting Specialist		14	4	71,954	287,816
Digital Broadcasting Specialist		13	2	60,890	121,780
Communications Program Specialist		12	1	51,204	51,204
Computer Specialist		12	1	51,204	51,204
Grants Specialist		9	2	35,310	70,620
Grants Assistant		6	1	25,976	25,976
Subtotal			11		608,600
Less lapse	25.00%		(3)		(152,150)
Total full-time permanent			8		456,450
2001 Pay Adjustment	3.7%				16,889
					473,339

Personnel Data	
Full-Time Equivalent Employment:	
Full-time permanent	8
Other than full-time permanent	0
Total	8
Authorized Positions:	
Full-time permanent	11
Other than full-time permanent	0
Total	11

Exhibit 15

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: Public Telecommunications Facilities, Planning and Construction
Program Change: Public Broadcasting's Digital Conversion

Object Class		2001 Increase
11	Personnel compensation	
11.1	Full-time permanent	473
11.3	Other than full-time permanent	
11.5	Other personnel compensation	
11.9	Total personnel compensation	473
12.1	Civilian personnel Benefits	125
21	Travel and transportation of persons	82
22	Transportation of things	1
23.1	Rental payments to GSA	112
23.2	Rental payments to others	0
23.3	Communications, utilities and misc charges	23
24	Printing and reproduction	18
25.1	Consulting Services	386
25.2	Other Services	377
25.3	Purchase of goods & services from Gov't accounts	495
25.7	Operation and maintenance of equipment	14
26	Supplies and materials	16
31	Equipment	78
41	Grants, Subsidies and contributions	81,300
99	**Total obligations**	83,500

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class		1999 Actual	2000 Currently Available	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
11	Personnel compensation					
11.1	Full-time permanent	$760	$920	$969	$1,442	$473
11.3	Other than full-time permanent	0	0	0	0	0
11.5	Other personnel compensation	42	25	25	25	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	**Total personnel compensation**	802	945	994	1,467	473
12.1	Civilian personnel benefits	155	190	214	339	125
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	46	52	54	136	82
22	Transportation of things	4	2	2	3	1
23.1	Rental payments to GSA	107	85	87	199	112
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities and miscellaneous charges	18	0	0	23	23
24	Printing and reproduction	22	21	22	40	18
25.1	Advisory and assistance services	17	22	22	408	386
25.2	Other services	112	209	209	586	377
25.3	Purchases of goods and services from Government accounts	535	385	251	746	495
25.7	Operation and maintenance of equipment	6	3	3	17	14
26	Supplies and materials	11	10	10	26	16
31	Equipment	18	7	7	85	78
41	Grants, subsidies and contributions	21,735	25,084	24,700	106,000	81,300
99	**TOTAL OBLIGATIONS**	23,588	27,015	26,575	110,075	83,500

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Personnel Data	1999 Actual	2000 Currently Available	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	12	13	13	21	8
Other than full-time permanent	0	0	0	0	0
Total	12	13	13	21	8
Authorized Positions:					
Full-time permanent	13	13	13	24	11
Other than full-time permanent	0	0	0	0	0
Total	13	13	13	24	11

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class		2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
11	Personnel compensation				
11.1	Full-time permanent				
	Senior executive service	$0	$128	$128	$0
	General schedule	49	841	1,314	473
	Subtotal	49	969	1,442	473
11.3	Other than full-time permanent				
	General schedule	0	0	0	0
	Subtotal	0	0	0	0
11.5	Other personnel compensation				
	Cash awards	0	25	25	0
	Other	0	0	0	0
	Subtotal	0	25	25	0
11.8	Special personnel services payments				
	Other	0	0	0	0
	Subtotal	0	0	0	0
11.9	Total personnel compensation	49	994	1,467	473
12.1	Civilian personnel benefits				
	Civil service retirement	(16)	30	30	0
	Federal employees' retirement	20	72	122	50
	Thrift savings plan	4	13	22	9
	Federal insurance contribution act - Medicare	0	29	36	7
	Federal insurance contribution act - OASDI	12	51	79	28
	Health insurance	4	7	35	28
	Life insurance	0	12	15	3
	Other	0	0	0	0
	Subtotal	24	214	339	125

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
13	Benefits for former personnel				
	Other	0	0	0	0
	Subtotal	0	0	0	0
21	Travel and transportation of persons				
	Common carrier	1	26	67	41
	Per diem/actual	1	28	69	41
	Other	0	0	0	0
	Subtotal	2	54	136	82
22	Transportation of things	0	2	3	1
23.1	Rental payments to GSA	2	87	199	112
23.2	Rental payments to others	0	0	0	0
23.3	Communications, utilities and miscellaneous charges				
	Rental of ADP equipment	$0	$0	$0	$0
	Rental of office copying equipment	0	0	0	0
	Federal telecommunications system	0	0	1	1
	Other telecommunications services	0	0	18	18
	Postal Service by USPS	0	0	1	1
	Other	0	0	3	3
	Subtotal	0	0	23	23
24	Printing and reproduction				
	Other	1	22	40	18
	Subtotal	1	22	40	18

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
25.1	Advisory and assistance services				
	Management and professional support services	0	22	408	386
	Studies, analyses, and evaluation	0	0	0	0
	Engineering and technical services	0	0	0	0
	Subtotal	0	22	408	386
25.2	Other services				
	Training				
	University	0	0	0	0
	Other	0	0	0	0
	ADP services	0	0	0	0
	Telecommunications services	0	0	0	0
	Other non-government contracts	0	209	586	377
	Other	0	0	0	0
	Subtotal	0	209	586	377
25.3	Purchases of goods and services from Government accounts	$4	$50	100	50
	Office of Personnel Management Training	0	0	0	0
	Maintenance of equipment	0	0	0	0
	Payments to GA, WCF	(7)	201	646	445
	Subtotal	(3)	251	746	495
25.7	Operation and maintenance of equipment	0	3	17	14

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
26	Supplies and materials				
	Office supplies	0	5	13	8
	ADP supplies	0	5	13	8
	Other	0	0	0	0
	Subtotal	0	10	26	16
31	Equipment				
	Office machines and equipment	0	0	0	0
	ADP hardware/software	0	7	85	78
	Other	0	0	0	0
	Subtotal	0	7	85	78
41	Grants, subsidies and contributions	0	24,700	106,000	81,300
99	**TOTAL OBLIGATIONS**	75	26,575	110,075	83,500

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
APPROPRIATIONS LANGUAGE AND CODE CITATIONS:

For grants authorized by sections 391 and 392 of the Communications Act of 1934, as amended, to become available on October 1 of the fiscal year specified and remain available until expended. *$110,075,000 in fiscal year 2001; $110,000,000 in fiscal year 2002; and $87,500,000 in fiscal year 2003. Provided*, That, not to exceed $4,075,000 shall be available for program administration as authorized by section 391 of the Act: *Provided further,* That notwithstanding the provisions of section 391 of the Act, the prior year unobligated balances may be made available for grants for projects for which applications have been submitted and approved during any fiscal year: *Provided further, That these funds shall be used for grants to support acquisition of core digital transmission capabilities and ensure public broadcasters' transition to digital broadcasting by 2003, as well as for necessary equipment and facilities to maintain public television and radio service: Provided further*, That hereafter, notwithstanding any other provision of law, the Pan Pacific Education and Communication Experiments by Satellite (PEACESAT) program is eligible to compete for Public Telecommunications Facilities, Planning and Construction funds.

47 U.S.C. § 391
47 U.S.C. § 392
47 U.S.C. § 902

47 U.S.C. § 391 authorizes the Secretary of Commerce to provide grant funds for the planning and construction of public telecommunications facilities by eligible entities.

47 U.S.C. § 392 sets forth the application requirements to be submitted to the Secretary of Commerce by eligible entities to request funds for the construction of public telecommunications facilities.

47 U.S.C. § 902 (b) (3) (B) assigns to NTIA the administration of the Public Telecommunications Facilities Program.

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
ADVISORY AND ASSISTANCE SERVICES
(Dollar amounts in thousands)

	1999 Actual	2000 Estimate	2001 Estimate
Management and Professional Support Services	$ 17	$ 22	$ 409
Studies, Analysis & Evaluations	0	0	0
Engineering & Technical Services	0	0	0
Total	$ 17	$ 22	$ 409

Management & Professional Support Services:

The Public Telecommunications Facilities, Planning and Construction Program utilizes consultants to review and evaluate grant applications. In FY 2001 consultants will be used to assist broadcasting stations during the nationwide transition to digital broadcasting.

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
PERIODICALS, PAMPHLETS AND AUDIOVISUAL PRODUCTS
(Dollar amounts in thousands)

	1998 Actual	1999 Actual	2000 Estimate	2001 Estimate
Periodicals	$ 0	$ 0	$ 0	$ 0
Pamphlets	5	5	5	5
Audiovisual Products	0	0	0	0
Total	$ 5	$ 5	$ 5	$ 5

The Public Telecommunications Facilities, Planning and Construction Program utilizes pamphlets to provide grant application guidelines and reporting requirements.

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
AVERAGE GRADE AND SALARIES

	1999 Actual	2000 Estimated	2001 Estimated
Direct:			
Average ES Salary	$0	$0	$0
Average GS Grade	11.7	11.8	12.2
Average GS Salary	$53,836	$57,608	$61,271

Department of Commerce
National Telecommunications and Information Administration
Endowment for Children's Educational Television
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations
Appropriation available, FY 2000	0	0	$0	$18
less: Obligations from prior years	0	0	0	(18)
plus: 2001 adjustments to base	0	0	0	0
2001 Base	0	0	0	0
plus: 2001 program changes	0	0	0	0
2001 Estimate	0	0	0	0

Comparison by activity/subactivity		1999 Actual		FY 2000 Currently Available		2001 Base		2001 Estimate		2001 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Endowment for Children's Educational Television											
Grants	Pos/BA	0	$0	0	$0	0	$0	0	$0	0	$0
	FTE/Obl.	0	0	0	0	0		0		0	
Program management	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	0	0	18	0		0		0	
TOTALS	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	0	0	18	0		0		0	
Adjustments to Obligations											
Recoveries			0				0		0		0
Unobligated Balance, start of year			(1,193)		(18)		0		0		0
Unobligated balance transferred			0		0		0		0		0
Unobligated Balance, end of year			18		0		0		0		0
Unobligated balance expiring			0		0		0		0		0
Financing from transfers:											
Transfer from other accounts (-)			0		0		0		0		0
Transfer to other accounts (+)			0		0		0		0		0
Appropriation			(1,175)		0		0		0		0

Department of Commerce
National Telecommunications and Information Administration
Endowment for Children's Educational Television
SUMMARY OF FINANCING
(Dollar amounts in thousands)

Comparison by activity	FY 1999 Actual	FY 2000 Currently Available	FY 2001 Base	FY 2001 Estimate	2001 Increase/ (Decrease)
Total Obligations	**$0**	**$18**	**$0**	**$0**	**$0**
Offsetting collections from:					
Federal funds	0	0	0	0	0
Non-Federal sources 1/	0	0	0	0	0
Recoveries	0	0	0	0	0
Unobligated balance, start of year	(1,193)	(18)	0	0	0
Unobligated balance transferred	0	0	0	0	0
Unobligated balance, end of year	18	0	0	0	0
Unobligated balance expiring	0	0	0	0	0
Budget Authority	**(1,175)**	**0**	**0**	**0**	**0**
Financing:					
Transferred from other accounts (-)	0	0	0	0	0
Transferred to other accounts (+)	0	0	0	0	0
Appropriation	**(1,175)**	**0**	**0**	**0**	**0**

1/ Non-Federal users of the Telecommunications Analysis (T.A) Services program.

Department of Commerce
National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations
Appropriation available, FY 2000	24	24	$15,500	$16,930
less: Obligations from prior years	0	0	0	(1,430)
plus: 2001 adjustments to base	0	0	119	119
2001 Base	24	24	15,619	15,619
plus: 2001 program changes	7	5	29,500	29,500
2001 Estimate	31	29	45,119	45,119

Comparison by activity/subactivity		1999 Actual		FY 2000 Currently Available		2001 Base		2001 Estimate		2001 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Technology Opportunities Program											
Grants	Pos/BA	0	$15,000	0	$12,500	0	$12,500	0	$41,000	0	$28,500
	FTE/Obl.	0	17,604	0	13,066	0		0		0	
Program management	Pos/BA	34	3,000	24	3,000	24	3,119	31	4,119	7	1,000
	FTE/Obl.	22	3,813	24	3,864	24		29		5	
TOTALS	Pos/BA	34	18,000	24	15,500	24	15,619	31	45,119	7	29,500
	FTE/Obl.	22	21,417	24	16,930	24		29		5	
Adjustments to Obligations											
Recoveries			(2,576)		0		0		0		0
Unobligated Balance, start of year			(2,271)		(1,430)		0		0		0
Unobligated balance transferred			0		0		0		0		0
Unobligated Balance, end of year			1,430		0		0		0		0
Unobligated balance expiring			0		0		0		0		0
Financing from transfers:											
Transfer from other accounts (-)			0		0		0		0		0
Transfer to other accounts (+)			0		0		0		0		0
Appropriation			18,000		15,500		15,619		45,119		29,500

Department of Commerce
National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
SUMMARY OF FINANCING
(Dollar amounts in thousands)

Comparison by activity	FY 1999 Actual	FY 2000 Currently Available	FY 2001 Base	FY 2001 Estimate	FY 2001 Increase/ (Decrease)
Total Obligations	**$21,417**	**$16,930**	**$15,619**	**$45,119**	**$29,500**
Offsetting collections from:					
Federal funds	0	0	0	0	0
Non-Federal sources	0	0	0	0	0
Recoveries	(2,576)	0	0	0	0
Unobligated balance, start of year	(2,271)	(1,430)	0	0	0
Unobligated balance transferred	0	0	0	0	0
Unobligated balance, end of year	1,430	0	0	0	0
Unobligated balance expiring	0	0	0	0	0
Budget Authority	**18,000**	**15,500**	**15,619**	**45,119**	**29,500**
Financing:					
Transferred from other accounts (-)	0	0	0	0	0
Transferred to other accounts (+)	0	0	0	0	0
Appropriation	**18,000**	**15,500**	**15,619**	**45,119**	**29,500**

Department of Commerce
National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
ADJUSTMENTS TO BASE

Adjustments to Base	Positions	FTE	Amount ($000)
TRANSFER			
Departmental Working Capital Fund transfer to GA for security	0	0	(18)
COST CHANGES			
Full-year cost of FY 2000 pay increase and related costs	0	0	21
FY 2001 pay raise	0	0	54
One less compensable day	0	0	(6)
Within-grade step increases	0	0	22
Civil Service Retirement System (CSRS)	0	0	(1)
Federal Employees Retirement System (FERS)	0	0	2
Federal Insurance Contribution Act (FICA) - OASDI	0	0	2
Health Insurance	0	0	9
Travel	0	0	13
Rental payments to GSA	0	0	3
Printing and reproduction	0	0	3
Working Capital Fund	0	0	8
General Pricing Level Adjustment			
Other services	0	0	7
Subtotal, Cost Changes	0	0	137
	0	0	0
Total, Adjustments to Base	0	0	119

Department of Commerce

National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
JUSTIFICATION OF ADJUSTMENTS TO BASE

Adjustments to Base		Positions	FTE	Amount ($000)
TRANSFER				
Deparmental WorkingCapital Fund transfer to GA of $18,000 for security costs		0	0	(18)
COST CHANGES:				
Pay Raises				
Full-year cost of FY 2000 pay increase and related costs		0	0	75
The FY 2000 President's budget assumes a pay raise of 4.4 percent to be effective January 1, 2000.				
Total cost in FY 2001 of FY 2000 pay increase	$73,000			
Less amount funded in FY 2000	(53,000)			
Amount requested in 2001 to provide cost of 2000 pay raise	20,000			
Payment to Working Capital Fund	1,000			
Total, FY 2000 pay raise increase in FY 2001	21,000			
FY 2001 pay increase and related costs				
A general pay raise of 3.7 percent is assumed to be effective January 1, 2001.				
Total cost in FY 2001 pay increase	45,000			
Less amount absorbed in FY 2001	0			
Amount requested in FY 2001 pay increase	45,000			
Payment to Working Capital Fund	9,000			
Total adjustment for FY 2001 pay increase	54,000			
Within-grade step increases		0	0	22
An increase of $22,569 is required to cover the cost of within-grade step increases. This estimate reflects the net cost of step increases which will be earned in FY 2001.				
Estimated number of within-grade step increases	14			
Step increases not earned due to turnover (23.2 x 3)	1			
Average step above step 1 per separation	4			
Average cost per within-grade step increase	$1,880			
Gross cost of scheduled step increases ($1,898 x 14)	26,320			
Less savings due to separations ($1,898x 1 x 2)	(7,520)			
Subtotal, personnel compensation	18,800			
Benefits	3,539			
Total adjustment to base	22,339			

Department of Commerce

National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
JUSTIFICATION OF ADJUSTMENTS TO BASE

Adjustments to Base		Positions	FTE	Amount ($000)
Civil Service Retirement System (CSRS)		0	0	(1)
The number of employees covered by CSRS continues to drop as positions become vacant and are filled by employees who are covered by the Federal Employees' Retirement System (FERS). The estimated percentage of payroll for employees covered by CSRS will drop from 14.6 percent in FY 2000 to 13.4 percent in FY 2001. The contribution rate will remain at 8.5 percent.				
FY 2001 ($1,330,000 x .134 x .0851)	15,167			
FY 2000 ($1,330,000 x .146 x .0851)	16,525			
Total adjustment to base	(1,358)			
Federal Employees Retirement System (FERS)		0	0	2
The number of employees covered by FERS continues to rise as employees covered by CSRS leave and are replaced by employees covered by FERS. The estimated percentage of payroll for employees covered by FERS will rise from 85.4 percent in FY 2000 to 86.6 percent in FY 2001. The contribution rate will remain 10.7 percent.				
FY 2001 ($1,330,000 x .866 x .107)	123,240			
FY 2000 ($1,330,000 x .854 x .107)	121,533			
Total adjustment to base	1,707			
Federal Insurance Contribution Act (FICA)		0	0	2
As the percentage of payroll covered by FERS rises, the cost of OASDI contributions will increase. In addition, the maximum salary subject to OASDI tax will rise from $73,275 in FY 2000 to $78,450 in FY 2001. The OASDI tax rate will remain 6.2 percent.				
Regular Salaries				
FY 2001 ($1,330,000 x .866 x .956 x .062)	68,268			
FY 2000 ($1,330,000 x .854 x .942 x .062)	66,336			
Increase for FY 2001	1,932			
Other Salaries				
FY 2001 ($25,000 x .866 x .956 x .062)	2,252			
FY 2000 ($25,000 x .854 x .942 x .062)	2,219			
Increase for FY 2001	33			
Total adjustment to base	1,965			
Health Insurance		0	0	9
Effective January 1999, NTIA's contribution to Federal employees' health insurance premiums increased by 11.0 percent. This represents an increase of $9,240 over the FY 2000 estimate of $84,000.				

Department of Commerce

National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
JUSTIFICATION OF ADJUSTMENTS TO BASE

Adjustments to Base	Positions	FTE	Amount ($000)
One Less Compensable Day The decreased cost of one less compensable day in FY 2001 compared to FY 2000 is calculated by dividing the 2000 estimated personnel compensation ($1,330,000) and applicable benefits ($275,000) by 261 compensable days. The decreased cost of one less compensable day is ($5,828).	0	0	(6)
Travel Effective January 1999, the General Services Administration raised per deim rates. This increase resulted in a 7.6 percent increase to NTIA. This percentage was applied to the FY 2000 estimate of $200,000. An additional $3,000 is requested to cover the cost of purchasing airline tickets in contracting with a travel agency under the new travel system.	0	0	13
Rental payments to GSA GSA rates are projected to increase 2.1 percent in FY 2000. This percentage was applied to the FY 2000 estimate of $142,000 to arrive at an increase of $2,982.	0	0	3
GPO Printing GPO has provided an estimated rate increase of 3.3 percent. This percentage was applied to the FY 2000 estimate of $100,000 to arrive at an increase of $3,330.	0	0	3
Working Capital Fund An additional amount of $8,000 is required to fund cost increases in the Departmental Working Capital Fund.	0	0	8
General Pricing Level Adjustment This request applies 1.5 percent based on OMB economic assumptions for FY 2001 to subobject classes where the prices that the Government pays are established through the market system. Factors are applied to other services ($7,000).	0	0	7
Total, Adjustments to Base	0	0	119

Department of Commerce
National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: Technology Opportunities Program
Subactivity: Grants and program management

Comparison by line item		1999 Actual		FY 2000 Currently Available		2001 Base		2001 Estimate		2001 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Grants.....	Pos/BA	0	$15,000	0	$12,500	0	$12,500	0	$41,000	0	$28,500
	FTE/Obl.	0	17,604	0	13,066	0		0		0	
Program management.....	Pos/BA	34	3,000	24	3,000	24	3,119	31	4,119	7	1,000
	FTE/Obl.	22	3,813	24	3,864	24		29		5	
Direct Obligations.....	Pos/BA	34	18,000	24	15,500	24	15,619	31	45,119	7	29,500
	FTE/Obl.	22	21,417	24	16,930	24		29		5	

Department of Commerce
National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
Justification of Program Performance

Goal Statement

The Administration supports the development of an information infrastructure which will ultimately interconnect the Nation's businesses, residences, schools, health care facilities, and other public service providers through broadband, interactive telecommunications networks. Providing access to a new form of service for all Americans is a key ingredient to successful implementation of information infrastructure. NTIA funding assists state, local, and tribal governments, libraries, health care organizations, community colleges, universities, research facilities, technical schools, community centers, museums, educational and cultural institutions, and other public service providers in purchasing equipment, software and services, planning, training users, and evaluating the application of information infrastructure in a variety of public sector settings. Through NTIA support, projects will demonstrate the viability of innovative systems, the utility of interconnection among existing systems, and the efficacy of using an advanced information infrastructure in the public and non-profit sectors. Advanced telecommunications and information systems will in turn help to stimulate economic development, improve learning at all levels, improve the delivery of health care, strengthen public safety efforts, and allow greater access for ordinary citizens to information resources throughout the country. Improvements in these services are especially needed in rural, remote, and economically disadvantaged areas. The goal of the program is to promote the widespread availability and use of an advanced information infrastructure in the public and non-profit sectors through support, evaluation, and dissemination of the results of outstanding projects that deploy and use advanced information and telecommunications systems to serve the public. By stimulating rapid adoption of advanced information technology in the public and non-profit sectors, TOP grants promote innovation and economic growth for all American communities.

Proposed Legislation

Legislation to authorize appropriations for the continuation of this program.

Base Program

Explanation and Justification

The Administration has called for the development of a national broadband, interactive information infrastructure capable of transporting large quantities of data at high speed. Such "information superhighways" will pay enormous dividends to both the Nation's economic competitiveness and the quality of life of all Americans. In the first five years of the program, NTIA has awarded 421 grants in all 50 states for a total of $136 million. These grants have in turn leveraged $203 million in non-Federal matching funds. These awards have gone to rural hospitals, public libraries, schools, community colleges, local governments, and community-based non-profits to creatively use technology to provide new and improved services to their communities. The program has been exceptionally competitive; the ratio of funds requested to funds awarded during the first five years has been 18 to 1.

The Administration initiative gave the Department of Commerce's NTIA responsibility to manage this program. NTIA's extensive expertise in broadband digital services and radio-based technologies and knowledge of the telecommunications market, network innovations, and regulatory environment, have enabled NTIA to initiate and efficiently manage a technology opportunities grant program of this magnitude.
Under the Technology Opportunities Program, it is envisioned that the private sector will take the lead in developing the Nation’s information infrastructure. Federal funding will function as a catalyst for private investment in areas that would otherwise be neglected by the private sector. The Federal commitment to the development of an information infrastructure provides incentives (directly through matching grant requirements and indirectly through demonstrations of technology and applications) for other public, private, and non-profit institutions to make additional investments for facilities that complement those funded under this program. The projects funded under this program demonstrate and evaluate innovative uses of advanced information infrastructure in the delivery of a variety of public services at the community level. These projects, by deploying creative solutions to practical problems and by highlighting best practices, are raising our national understanding of how to harness the opportunities provided by advanced information infrastructure to serve the public. By supporting model projects that can be replicated in other communities, the program has a ripple effect that extends beyond the communities that are directly served by the awards.

The program will continue to focus on projects that are locally designed and developed – projects that address real needs in local communities. For example, the program has supported projects that have enabled home health aides to increase their productivity and care for more patients, allowing more elderly patients to remain at home instead of in nursing homes; extended learning opportunities for chronically ill children; and enabled access to real-time information on environmental conditions to assist emergency officials coordinate responses in weather emergencies. The grants do more than provide access to the national information infrastructure. These projects help communities learn how to apply technology in effective, efficient ways to meet their needs.

The Technology Opportunities Program provides support for innovative projects that can serve as replicable models for other communities to follow. In order for the projects to be replicated and adopted on a large scale, it is essential that they are carefully evaluated and that the knowledge gained from their implementation and evaluation be widely disseminated. The program will continue to commit resources to evaluation and dissemination activities, which will result in a greater awareness in the public and non-profit sectors of how advanced telecommunications and information technology can be used effectively and efficiently to serve the public.

The program will continue to support the application of a variety of technologies, including cellular and other wireless technologies, Internet, digital microwave, Global Positioning System (GPS) and Geographic Information System (GIS), distributed databases, audio and video streaming, and satellite. Applicants can use technologies they believe will best assist them in developing the information infrastructure needed to deliver the services that they propose. Applicants are instructed to make appropriate use of existing infrastructure and to use commercially provided services, wherever possible, to avoid Federal support for redundant facilities.

Noncommercial entities and public institutions in a number of public sectors, including local government, education, culture, health care, public safety, and economic development, are examining the potential of telecommunications and information technology to expand their reach and better serve the public. The base level of funding will permit NTIA to support a broad range of public sector projects using a variety of technologies and methods that will demonstrate the benefits of an integrated information infrastructure. This broad focus will allow other organizations to learn from these projects and to model their own efforts after the best approach to meet their needs.

Statement of Operating Objectives

NTIA will fund innovative projects that will serve as models for using technology to strengthen communities through economic development and greater civic participation, offer greater access to medical care and improve the health of the public, improve public safety, provide equitable access to information, lifelong learning and cultural resources, and make public services more responsive. NTIA will work closely with other Federal agencies to ensure that grants awarded through this program complement and do not duplicate other Federal activities.

NTIA will increase its efforts in evaluation of the program and of the projects that are supported by the program. Through careful evaluation of the grants, the benefits that are being realized and the lessons learned by the funded projects will be better understood. In addition, NTIA will actively coordinate with interested parties both within and outside the Federal Government to disseminate the results of the projects and any evaluation findings through publications, workshops, and postings on its world wide web site.

Department of Commerce
National Telecommunication and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]

FY 2001 Budget Initiative
Technology Opportunities Grants

Appropriation: + $29.5 million	Permanent Pos. + 7	FTEs: + 5

A component of the Digital Divide Initiative, this program will demonstrate the viability of innovative systems, the utility of interconnection among existing systems, and their potential for enabling E-commerce, learning at all levels, improved health care delivery, strengthen public safety, and greater access for ordinary citizens to information resources throughout the country.

The Administration supports the development of an information infrastructure which will ultimately interconnect the Nation's businesses, residences, schools, health care facilities, and other public service providers through broadband, interactive telecommunications networks. Providing access to and new forms of service for all Americans is a key ingredient to successful development of the information infrastructure. NTIA funding assists state, local, and tribal governments; libraries; health care organizations; community colleges; universities; research facilities; technical schools; community centers; museums; educational and cultural institutions; and other public service providers in purchasing equipment, software, and services; planning; training users; and evaluating the application of information infrastructure in a variety of public sector settings. Through NTIA support, projects will demonstrate the viability of innovative systems, the utility of interconnection among existing systems, and the efficacy of using an advanced information infrastructure in the public and non-profit sectors. Advanced telecommunications and information systems will in turn help to stimulate economic development and the development of E-commerce, improve learning at all levels, improve the delivery of health care, strengthen public safety efforts, and allow greater access for ordinary citizens to information resources throughout the country. Improvements in these services are especially needed in rural, remote, and economically disadvantaged areas. The goal of the program is to promote the widespread availability and use of an advanced information infrastructure in the public and non-profit sectors through support, evaluation, and dissemination of the results of outstanding projects that use advanced information and telecommunications systems to serve the public. By stimulating rapid adoption of advanced information technology in the public and nonprofit sectors, TOP grants promote innovation and economic growth for all American communities.

Explanation and Justification

Advances in telecommunications and network technologies have had a significant and pervasive impact on the way we work, learn, live and communicate. Research efforts in the private, non-profit, and public sector have accelerated the development of new technologies that will increase exponentially the capabilities and performance of today’s networks. Spurred by increased competition, telecommunications, cable,

network, and wireless firms are moving quickly to deploy the next generation of high bandwidth infrastructure. In addition, falling prices of computer and networking technologies have made access to these technologies more affordable than ever.

Despite the trends of increased performance and reduced cost of information technologies, underserved communities continue to lag significantly in their utilization of and access to network technologies. NTIA's Report, *Falling Through the Net: Defining the Digital Divide*, analyzed telephone and computer penetration rates across the United States to determine who is, and who is not yet, connected. The report found that the groups that were already connected (e.g., higher-income, more educated households) are now far more connected, while those with lower rates have increased less quickly. As a result, the gap between the information "haves" and "have nots" continues to grow. The increasing divides are particularly troublesome with regard to Internet access. Those Americans enjoying the greatest connectivity today are typically high-income households. Conversely, the least connected generally are low-income, Black, Hispanic, or Native American, senior in age, not employed, single-parent (especially female-headed) households, those with little education, and those residing in central cities or especially rural areas.

NTIA's experience with TOP (formerly the Information Infrastructure Grants Program) demonstrates that the demand for access to advanced network applications remains high in underserved communities. In FY 1999, TOP's predecessor received over 700 applications requesting $267 million in Federal funds. Because of the limited availability of funds, NTIA appropriately focused support on innovative demonstrations of network technology which had a high probability for replication. As a result, in FY 1999, NTIA was able to fund only 6% of the organizations that request support for the development of networked applications.

In FY 1999, the administration is requesting an additional $29.5 million to support additional projects that will demonstrate how community based organizations, state and local government agencies, educational institutions, health care facilities, libraries, and public safety agencies can use E-commerce tools and techniques to serve the public. NTIA seeks to support projects that serve a broad variety of needs, and the additional funds would also permit a more equitable distribution of projects in both rural and low-income urban communities across the country.

The increase in funding also provides economic stimulus to the telecommunications, networking and information industries, especially those serving rural markets, by increasing public sector demand for their products and services. Information technology has the potential to significantly reduce the administrative costs of health care and the costs of travel and consultations for rural populations. By providing new instructional resources and extending the resources of universities, community colleges, libraries, and technical schools to community based settings, telecommunications can increase access to educational opportunities for learners of all ages. Funding innovative, model projects and evaluative studies on the use of E-commerce tools in the public sector will accelerate the development of the market for these services.

Without additional Federal support, many public sector organizations will not be able to use technology in the near term. The gap between these organizations and those with the resources to acquire advanced technology today will increase. Studies have shown that both rural and urban underserved populations are typically the last populations to have access to and adopt new, beneficial technologies. Without the development of a "critical mass" of technology users in the public sector to drive the implementation of new products and services, many communities will not realize the benefits of the Nation's investment in advanced networking technologies. As a result, disparities between the nation's information "haves" and "have-nots" will increase to the detriment of America's international competitiveness.

The program will continue to focus on projects that are locally designed and developed – projects that address real needs in local communities. For example, the program has supported projects that have enabled home health aides to increase their productivity and care for more patients, allowing more elderly patients to remain at home instead of in nursing homes; extended learning opportunities for chronically ill children; and enabled access to real-time information on environmental conditions to assist emergency officials coordinate responses in weather emergencies. The grants do more than provide access to the national information infrastructure. These projects help communities learn how to apply information infrastructure in effective, efficient ways to meet their needs.

TOP Grants provide support for innovative projects that can serve as replicable models for other communities to follow. In order for the projects to be replicated and adopted on a large scale, it is essential that they are carefully evaluated and that the knowledge gained from their implementation and evaluation be widely disseminated. The program will continue to commit resources to evaluation and dissemination activities, which will result in a greater awareness in the public and non-profit sectors of how advanced information infrastructure can be used effectively and efficiently to serve the public.

The program will continue to support the application of a variety of technologies, including cellular and other wireless technologies, Internet, digital microwave, Global Positioning System (GPS) and Geographic Information System (GIS), distributed databases, audio and video streaming, and satellite. Applicants can use technologies they believe will best assist them in developing the information infrastructure needed to deliver the services that they propose. Applicants are instructed to make appropriate use of existing infrastructure and to use commercially provided services, wherever possible, to avoid Federal support for redundant facilities.

Noncommercial entities and public institutions in a number of public sectors, including local government, education, culture, health care, public safety, and economic development, are examining the potential of telecommunications and information technology to expand their reach and better serve the public. This broad focus will allow other organizations to learn from these projects and to model their own infrastructure efforts after the best approach to meet their needs. The additional $29.5 million will allow NTIA to award another 55 grants and more effectively meet the demand for projects utilizing network technologies.

Strategic Intent

The initiative contributes significantly to the three major goals of the Department of Commerce's mission. The first theme is to Stimulate Innovation for American Competitiveness. Funding for this program will help ensure that technology developed by the private sector and Commerce Department programs is transferred to the non-profit and public marketplace. Secondly, this program will help keep the nation competitive with cutting-edge science and technology and an unrivaled information base by expanding the user base of advanced network technologies. Finally, by ensuring participation of the non-profit and public sectors, the program will help provide effective management and stewardship of our nation's resources and assets to ensure sustainable economic opportunities.

The proposed program also supports two goals of NTIA's Strategic Plan:

- promote the availability and sources of advanced telecommunications and information services; and
- advance the public interest in telecommunications, mass media, and information.

Operating Objectives

The objectives of this initiative are to:

- increase the awareness of how advanced information technologies can be used;
- provide the non-profit and public sectors with opportunities to understand how the technologies can be deployed to improve their operations; and
- working in partnership with other Federal Agencies and private industry, assure that the infrastructure is in place to allow all American communities access to these technologies and advanced services.

NTIA will fulfill the operating objectives through three areas of activities–grant competition, case studies, and sharing of results. As the grants are completed, case studies will be prepared to guide others. These case studies will be actively shared using a full range of dissemination techniques that range from newsletters, web sites, and on-site workshops.

Performance Measures

Measuring the program's effectiveness will involve an assessment of both output and outcome measures including:

Number of applications received in each domain

Number of applications funded in each domain

Number of partners

Number of models shared

Number and variety of dissemination activities (e.g., articles published, presentations made, meetings hosted, etc.) from grant recipients on lessons learned and best practices.

The following table provides the basis for the measures of the program's effectiveness and performance:

	FY 2001	FY2002	FY 2003	FY2004	FY 2005
Outputs:					
Applications awarded:	+80	+80	+80	+80	+80
Number of states participating in program	50	50	50	50	50
Outcomes:					
Number of case studies of demonstration projects (Cumulative)	N/A	20	40	60	80
Number of workshops assisting public and nonprofit organizations with advanced telecommunications and information technology projects and disseminating results of funded projects	6	6	6	6	6
Number of organizations using program publications and information services to develop advanced telecommunications and information technology applications (Cumulative)	150	300	450	650	850

Exhibit 14

Department of Commerce
National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
PROGRAM CHANGE PERSONNEL DETAIL

Activity: Technology Opportunities Program
Program Change: Technology Opportunities Grants

Personnel Title:		Grade	Number	2000 Annual Salary	Total Salaries
Telecommunications Program Specialist		14	3	71,954	215,862
Telecommunications Program Specialist		13	3	60,890	182,670
Grants Specialist		9	1	35,310	35,310
Subtotal			7		433,842
Less lapse	25.00%		(2)		(108,461)
Total full-time permanent			5		325,382
2001 Pay Adjustment	3.7%				12,039
					337,421

Personnel Data	
Full-Time Equivalent Employment:	
Full-time permanent	5
Other than full-time permanent	0
Total	5
Authorized Positions:	
Full-time permanent	7
Other than full-time permanent	0
Total	7

Exhibit 15

Department of Commerce
National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: Technology Opportunities Program
Program Change: Technology Opportunities Grants

Object Class		2001 Increase
11	Personnel compensation	
11.1	Full-time permanent	337
11.3	Other than full-time permanent	
11.5	Other personnel compensation	
11.9	Total personnel compensation	337
12.1	Civilian personnel Benefits	87
21	Travel and transportation of persons	55
22	Transportation of things	1
23.1	Rental payments to GSA	72
23.2	Rental payments to others	0
23.3	Communications, utilities and misc charges	15
24	Printing and reproduction	19
25.1	Consulting Services	20
25.2	Other Services	76
25.3	Purchase of goods & services from Gov't accounts	251
25.7	Operation and maintenance of equipment	8
26	Supplies and materials	10
31	Equipment	49
41	Grants, Subsidies and contributions	28,500
99	**Total obligations**	29,500

Department of Commerce
National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	1999 Actual	2000 Currently Available	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
11	Personnel compensation					
11.1	Full-time permanent	$1,299	$1,330	$1,421	$1,758	$337
11.3	Other than full-time permanent	0	0	0	0	0
11.5	Other personnel compensation	63	38	38	38	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	**Total personnel compensation**	1,362	1,368	1,459	1,796	337
12.1	Civilian personnel benefits	271	275	287	374	87
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	206	200	209	264	55
22	Transportation of things	13	10	10	11	1
23.1	Rental payments to GSA	210	142	145	217	72
23.2	Rental payments to others	22	0	0	0	0
23.3	Communications, utilities and miscellaneous charges	38	71	71	86	15
24	Printing and reproduction	99	100	103	122	19
25.1	Advisory and assistance services	394	160	160	180	20
25.2	Other services	599	834	201	277	76
25.3	Purchases of goods and services from Government accounts	521	630	400	651	251
25.7	Operation and maintenance of equipment	9	29	29	37	8
26	Supplies and materials	26	20	20	30	10
31	Equipment	43	25	25	74	49
41	Grants, subsidies and contributions	17,604	13,066	12,500	41,000	28,500
44	Refunds	0	0	0	0	0
99	**TOTAL OBLIGATIONS**	21,417	16,930	15,619	45,119	29,500

Department of Commerce
National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Personnel Data	1999 Actual	2000 Currently Available	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	22	24	24	29	5
Other than full-time permanent	0	0	0	0	0
Total	22	24	24	29	5
Authorized Positions:					
Full-time permanent	34	24	24	31	7
Other than full-time permanent	0	0	0	0	0
Total	34	24	24	31	7

National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class	2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
11 Personnel compensation				
11.1 Full-time permanent				
Senior executive service	$0	$5	$5	$0
General schedule	91	1,416	1,753	337
Students	0	0	0	0
Subtotal	91	1,421	1,758	337
11.3 Other than full-time permanent				
General schedule	0	0	0	0
Subtotal	0	0	0	0
11.5 Other personnel compensation				
Cash awards	0	38	38	0
Other	0	0	0	0
Subtotal	0	38	38	0
11.8 Special personnel services payments				
Other	0	0	0	0
Subtotal	0	0	0	0
11.9 Total personnel compensation	91	1,459	1,796	337
12.1 Civilian personnel benefits				
Civil service retirement	(1)	17	17	0
Federal employees' retirement	2	100	136	36
Thrift savings plan	0	18	25	7
Federal insurance contribution act - Medicare	0	0	5	5
Federal insurance contribution act - OASDI	2	55	75	20
Health insurance	9	93	111	18
Life insurance	0	2	3	1
Employees' compensation fund	0	2	2	0
Other	0	0	0	0
Subtotal	12	287	374	87

National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class		2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
13	Benefits for former personnel				
	Other	$0	$0	$0	$0
	Subtotal	0	0	0	0
21	Travel and transportation of persons				
	Common carrier	4	104	139	35
	Per diem/actual	9	105	125	20
	Other	0	0	0	0
	Subtotal	13	209	264	55
22	Transportation of things	0	10	11	1
23.1	Rental payments to GSA	3	145	217	72
23.2	Rental payments to others	0	0	0	0
23.3	Communications, utilities and miscellaneous charges				
	Rental of ADP equipment	0	0	0	0
	Rental of office copying equipment	0	0	0	0
	Federal telecommunications system	0	2	2	0
	Other telecommunications services	0	69	78	9
	Postal Service by USPS	0	0	6	6
	Other	0	0	0	0
	Subtotal	0	71	86	15
24	Printing and reproduction				
	Publications	3	103	122	19
	Other	0	0	0	0
	Subtotal	3	103	122	19

National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class	2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
25.1 Advisory and assistance services				
Management and professional support services	$0	$160	$180	$20
Studies, analyses, and evaluation	0	0	0	0
Engineering and technical services	0	0	0	0
Subtotal	0	160	180	20
25.2 Other services				
Training				
University	0	0	0	0
Other	0	0	0	0
Other non-government contracts	0	0	0	0
Other	0	201	277	76
Subtotal	0	201	277	76
25.3 Purchases of goods and services from Government accounts	0	100	200	100
Office of Personnel Management Training	0	0	0	0
GSA reimbursable services	0	0	0	0
ERR	0	0	10	10
Payments to GA, WCF	(3)	300	441	141
Subtotal	(3)	400	651	251
25.7 Operation and maintenance of equipment	0	29	37	8
26 Supplies and materials				
Office supplies	0	10	15	5
ADP supplies	0	10	15	5
Other	0	0	0	0
Subtotal	0	20	30	10

National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class		2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
31	Equipment				
	Office machines and equipment	$0	$0	$9	$9
	ADP hardware/software	0	25	65	40
	Other	0	0	0	0
	Subtotal	0	25	74	49
41	Grants, subsidies and contributions	0	12,500	41,000	28,500
99	TOTAL OBLIGATIONS	119	15,619	45,119	29,500

Department of Commerce
National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
APPROPRIATIONS LANGUAGE AND CODE CITATIONS

For grants authorized by section 392 of the Communications Act of 1934, as amended, $45,119,000 to remain available until expended as authorized by section 391 of the Act, as amended: Provided, That not to exceed $4,119,000 shall be available for program administration and other support activities as authorized by section 391: *Provided further,* That, of the funds appropriated herein, not to exceed 5 percent may be available for telecommunications research activities for projects related directly to the development of a national information infrastructure: *Provided further,* That, notwithstanding the requirements of sections 392(a) and 392(c) of the Act, these funds may be used for the planning and construction of telecommunications networks for the provision of educational, cultural, health care, public information, public safety, or other social services: *Provided further,* That notwithstanding any other provision of law, no entity that receives telecommunications services at preferential rates under section 254(h) of the Act (47 U.S.C. 254(h)) or receives assistance under the regional information sharing systems grant program of the Department of Justice under part M of title I of the Omnibus Crime Control and Safe Streets Act of 1968 (42 U.S.C. 3796h) may use funds under a grant under this heading to cover any costs of the entity that would otherwise be covered by such preferential rates or such assistance, as the case may be.

47 U.S.C. § 391
47 U.S.C. § 392
47 U.S.C. § 254(h)
42 U.S.C. § 3796h
47 U.S.C. § 902 (b)(3)(B)

47 U.S.C. § 391 authorizes the Secretary of Commerce to provide grant funds for the planning and construction of public telecommunications facilities by eligible entities.

47 U.S.C. § 392 sets forth the application requirements to be submitted to the Secretary of Commerce by eligible entities to request funds for the construction of public telecommunications facilities.

47 U.S.C. § 254(h) sets forth the requirement that certain entities receive telecommunications services at preferential rates.

42 U.S.C. § 3796h authorizes the Director of the Bureau of Justice Assistance to provide assistance for regional information sharing systems.

47 U.S.C. § 902 (b)(3)(B) assigns to NTIA the administration of the Public Telecommunications Facilities Program

Department of Commerce
National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
ADVISORY AND ASSISTANCE SERVICES
(Dollar amounts in thousands)

	1999 Actual	2000 Estimate	2001 Estimate
Management and Professional Support Services	$394	$ 160	$ 180
Studies, Analysis & Evaluations	0	0	0
Engineering & Technical Services	0	0	0
Total	$394	$ 160	$ 180

Management & Professional Support Services:

The Technology Opportunities Program utilizes consultants to review and evaluate grant applications.

Department of Commerce
National Telecommunications and Information Administration
Technology Opportunities Program [replaces Information Infrastructure Grants]
PERIODICALS, PAMPHLETS AND AUDIOVISUAL PRODUCTS
(Dollar amounts in thousands)

	1998 Actual	1999 Actual	2000 Estimate	2001 Estimate
Periodicals	$ 36	$ 18	$ 20	$ 25
Pamphlets	15	35	35	35
Audiovisual Products	3	0	0	0
Total	$ 54	$ 53	$ 55	$ 60

The Technology Opportunities Program utilizes pamphlets to provide grant application guidelines and reporting requirements.

Department of Commerce
National Telecommunications and Information Administration
Technology Opportunities Program
AVERAGE GRADE AND SALARIES

	1999 Actual	2000 Estimated	2001 Estimated
Direct:			
Average ES Salary	$125,900	$129,425	$133,308
Average GS Grade	11.5	11.8	12.0
Average GS Salary	$53,800	$57,808	$60,938

Department of Commerce
National Telecommunications and Information Administration
Home Internet Access
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations
Appropriation available, FY 2000	0	0	$0	$0
less: Obligations from prior years	0	0	0	0
plus: 2001 adjustments to base	0	0	0	0
2001 Base	0	0	0	0
plus: 2001 program changes	15	15	50,000	50,000
2001 Estimate	15	15	50,000	50,000

Comparison by activity/subactivity		1999 Actual		FY 2000 Currently Available		2001 Base		2001 Estimate		2001 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Technology Opportunities Program											
Grants	Pos/BA	0	$0	0	$0	0	$0	0	$46,000	0	$46,000
	FTE/Obl.	0	0	0	0	0		0		0	
Program management	Pos/BA	0	0	0	0	0	0	15	4,000	15	4,000
	FTE/Obl.	0	0	0	0	0		15		15	
TOTALS	Pos/BA	0	0	0	0	0	0	15	50,000	15	50,000
	FTE/Obl.	0	0	0	0	0		15		15	
Adjustments to Obligations											
Recoveries			0		0		0		0		0
Unobligated Balance, start of year			0		0		0		0		0
Unobligated balance transferred			0		0		0		0		0
Unobligated Balance, end of year			0		0		0		0		0
Unobligated balance expiring			0		0		0		0		0
Financing from transfers:											
Transfer from other accounts (-)			0		0		0		0		0
Transfer to other accounts (+)			0		0		0		0		0
Appropriation			0		0		0		50,000		50,000

Department of Commerce
National Telecommunications and Information Administration
Home Internet Access
SUMMARY OF FINANCING
(Dollar amounts in thousands)

Comparison by activity	FY 1999 Actual	FY 2000 Currently Available	FY 2001 Base	FY 2001 Estimate	FY 2001 Increase/ (Decrease)
Total Obligations	**$0**	**$0**	**$0**	**$50,000**	**$50,000**
Offsetting collections from:					
Federal funds	0	0	0	0	0
Non-Federal sources	0	0	0	0	0
Recoveries	0	0	0	0	0
Unobligated balance, start of year	0	0	0	0	0
Unobligated balance transferred	0	0	0	0	0
Unobligated balance, end of year	0	0	0	0	0
Unobligated balance expiring	0	0	0	0	0
Budget Authority	**0**	**0**	**0**	**50,000**	**50,000**
Financing:					
Transferred from other accounts (-)	0	0	0	0	0
Transferred to other accounts (+)	0	0	0	0	0
Appropriation	**0**	**0**	**0**	**50,000**	**50,000**

Department of Commerce
National Telecommunications and Information Administration
Home Internet Access
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: Home Internet Access
Subactivity: Grants and program management

Comparison by line item		1999 Actual		FY 2000 Currently Available		2001 Base		2001 Estimate		2001 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Grants.....	Pos/BA	0	$0	0	$0	0	$0	0	$46,000	0	$46,000
	FTE/Obl.	0	0	0	0	0		0		0	
Program management.....	Pos/BA	0	0	0	0	0	0	15	4,000	15	4,000
	FTE/Obl.	0	0	0	0	0		15		15	
Direct Obligations.....	Pos/BA	0	0	0	0	0	0	15	50,000	15	50,000
	FTE/Obl.	0	0	0	0	0		15		15	

Department of Commerce
National Telecommunication and Information Administration
Home Internet Access

FY 2001 Budget Initiative
Home Internet Access Grants

Appropriation: +$50.0 million	Permanent Pos. +15	FTEs: +15

A component of the Digital Divide Initiative, this program will make targeted investments to communities and populations that research shows are lacking access to the Internet.

To ensure that access to the Internet is an opportunity afforded to all Americans, the Administration proposes the creation of a new program that would provide low-income individuals and families with the connections, training, and support necessary for full participation in today's increasingly online society.

The extraordinary growth of the Internet and the World Wide Web is rapidly changing the way Americans, live, work, and communicate. These networks are swiftly making the dream of having "information at your fingertips" a reality. The Web is rich with educational content, with health information, and with news, government and community information. In addition, many Americans now take advantage of the many transactional services now available on the web, including online shopping and banking, travel reservations, and license renewals. The growth of the Internet and the Web have proven to be the engines of the 21st century economy.

While the Internet and the Web are bringing benefits to an increasing number of Americans, research shows that many are being left behind. NTIA's own series of *Falling Through the Net* reports have documented a significant and persisting gap in access to the Internet along the lines of income, education level, and geography. The most recent report in this series, *Falling Through the Net: Defining the Digital Divide*, published in July, 1999, showed that:

- households with incomes of $75,000 and higher are twenty times more likely to have access to the Internet than those at the lowest income levels, and more than nine times as likely to have a computer at home;

- Whites are more likely to have access to the Internet from home than Blacks or Hispanics have from any location. Black and Hispanic households are approximately one-third as likely to have home Internet access as households of Asian/Pacific Islander descent, and roughly two-fifths as likely as White households; and

- regardless of income level, Americans living in rural areas are lagging behind in Internet access. Indeed, at the lowest income levels, those in urban areas are more than twice as likely to have Internet access than those earning the same income in rural areas.

The report also showed that for many groups, the digital divide has widened as the information "haves" outpace the "have nots" in gaining access to electronic resources. The following gaps with regard to home Internet access are representative:

- the gaps between White and Hispanic households, and between White and Black households, are now more than six percentage points larger than they were in 1994; and

- the digital divides based on education and income level have also increased in the last year alone. Between 1997 and 1998, the divide between those at the highest and lowest education levels increased 25 percent, and the divide between those at the highest and lowest income levels grew 29 percent.

Kids and Media at the New Millennium, a recent report by the Kaiser Family Foundation, showed that for children, the digital divide is not in the schools, but in homes. Their study revealed that:

- while percentage of schoolchildren that had access to computers at school was comparable for children from both low-, middle-, and high-income families, schoolchildren from high-income families were twice as likely as children from low-income families to have access to computers in their homes; and

- white children were roughly twice as likely to live in homes with Internet access than were Black or Hispanic children.

The goal of the Home Internet Access program is to bridge the digital divide by providing targeted investments to bring these at-risk populations online. NTIA will build on its experience in supporting information infrastructure in low-income communities (through the Technology Opportunities Program, formerly known as the Telecommunications and Information Infrastructure Assistance Program) and in documenting and analyzing the digital divide (through the *Falling Through the Net* series).

This new program will build on the lessons of the highly successful Technology Opportunities Program (TOP). Through six years of supporting and evaluating projects that demonstrate innovative information technology applications in low-income communities, TOP has built an extensive base of knowledge on issues, challenges, and effective solutions. In particular, the Home Internet Access program would be designed around two of the hallmarks of the TOP program: 1) locally-driven solutions; and 2) public-private partnerships. NTIA's experience has shown that the most creative, innovative, and effective solutions come not from the federal government, but from local communities. Therefore, NTIA will challenge low-income communities to devise solutions that best reflect their circumstances and best meet their needs. NTIA's experience has also shown that strong partnerships and broad community support are key ingredients in sustaining information technology projects. The Home Internet Access program will encourage community-based partnerships and partnerships between local organizations, academia, and private industry. In order to demonstrate the local and private sector commitments, applicants will be required to provide matching funds.

NTIA will use the data from the *Falling Through the Net* survey to target the program's resources and as an ongoing performance measurement tool. First, survey data will identify the communities and populations most in need of assistance, initially and on an ongoing basis. Second, NTIA will monitor annual survey data to gauge the effectiveness of the program in improving home access in targeted communities and populations.

Strategic Intent

The initiative contributes significantly to major goals of the Department of Commerce's mission. This program will expand economic growth, trade and prosperity by strengthening the Nation's workforce, providing more Americans with the skills necessary to compete in the new economy. Secondly, this program will stimulate innovation for American competitiveness by expanding the user base of advanced network technologies.

The proposed program also supports two goals of NTIA's Strategic Plan:

- promote the availability and sources of advanced telecommunications and information services; and
- advance the public interest in telecommunications, mass media, and information.

Performance Measures

Measuring the program's effectiveness will involve an assessment of both output and outcome measures. Outputs will include:

Number of applications awarded

Number of partners represented by the applications funded

Outcomes will be examined on two levels — in the community and at the national level. First, NTIA would develop standard metrics for each access grant. Grant recipients would be required to report regularly on such items as the number of households connected to the Internet, the number of those households that have remained connected and active, and the number of people trained. These data would be aggregated at the program level and would give NTIA information on the degree to which the program is reaching the targeted populations for the purposes intended.

At the national level, NTIA would use the annual *Falling Through the Net* survey to examine the digital divide as a whole. The survey data would indicate the extent to which the program is helping to close the gaps based on income, education level, race, and geography. In particular, NTIA could examine the growth rates among targeted populations and look for accelerations in those rates. In addition to providing NTIA with a yardstick for measuring the program's overall effectiveness, the data would assist NTIA in identifying the communities to be targeted.

Department of Commerce
National Telecommunications and Information Administration
Home Internet Access
PROGRAM CHANGE PERSONNEL DETAIL

Activity: Home Internet Access
Program Change: Home Internet Access Grants

Personnel Title:		Grade	Number	2000 Annual Salary	Total Salaries
Director		15	1	84,207	84,207
Telecommunications Program Specialist		14	3	71,587	214,761
Telecommunications Program Specialist		13	5	60,580	302,900
Telecommunications Program Specialist		12	4	50,943	203,772
Telecommunications Program Specialist		11	1	42,505	42,505
Grants Specialist		9	1	35,131	35,131
Subtotal			15		883,276
Less lapse	0.00%		0		0
Total full-time permanent			15		883,276
2001 Pay Adjustment	3.7%				32,681
					915,957

Personnel Data	
Full-Time Equivalent Employment:	
Full-time permanent	15
Other than full-time permanent	0
Total	15
Authorized Positions:	
Full-time permanent	15
Other than full-time permanent	0
Total	15

Exhibit 15

Department of Commerce
National Telecommunications and Information Administration
Home Internet Access
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: Home Internet Access
Program Change: Home Internet Access Grants

Object Class		2001 Increase
11	Personnel compensation	
11.1	Full-time permanent	916
11.3	Other than full-time permanent	
11.5	Other personnel compensation	
11.9	Total personnel compensation	916
12.1	Civilian personnel Benefits	238
21	Travel and transportation of persons	82
22	Transportation of things	2
23.1	Rental payments to GSA	204
23.2	Rental payments to others	0
23.3	Communications, utilities and misc charges	42
24	Printing and reproduction	75
25.1	Consulting Services	400
25.2	Other Services	975
25.3	Purchase of goods & services from Gov't accounts	898
25.7	Operation and maintenance of equipment	25
26	Supplies and materials	28
31	Equipment	115
41	Grants, Subsidies and contributions	46,000
99	**Total obligations**	50,000

Department of Commerce
National Telecommunications and Information Administration
Home Internet Access
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class		1999 Actual	2000 Currently Available	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
11	Personnel compensation					
11.1	Full-time permanent	$0	$0	$0	$916	$916
11.3	Other than full-time permanent	0	0	0	0	0
11.5	Other personnel compensation	0	0	0	0	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	**Total personnel compensation**	0	0	0	916	916
12.1	Civilian personnel benefits	0	0	0	238	238
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	0	0	0	82	82
22	Transportation of things	0	0	0	2	2
23.1	Rental payments to GSA	0	0	0	204	204
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities and miscellaneous charges	0	0	0	42	42
24	Printing and reproduction	0	0	0	75	75
25.1	Advisory and assistance services	0	0	0	400	400
25.2	Other services	0	0	0	975	975
25.3	Purchases of goods and services from Government accounts	0	0	0	898	898
25.7	Operation and maintenance of equipment	0	0	0	25	25
26	Supplies and materials	0	0	0	28	28
31	Equipment	0	0	0	115	115
41	Grants, subsidies and contributions	0	0	0	46,000	46,000
44	Refunds	0	0	0	0	0
99	**TOTAL OBLIGATIONS**	0	0	0	50,000	50,000

Department of Commerce
National Telecommunications and Information Administration
Home Internet Access
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Personnel Data	1999 Actual	2000 Currently Available	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	0	0	0	15	15
Other than full-time permanent	0	0	0	0	0
Total	0	0	0	15	15
Authorized Positions:					
Full-time permanent	0	0	0	15	15
Other than full-time permanent	0	0	0	0	0
Total	0	0	0	15	15

Department of Commerce
National Telecommunications ind Information Administration
Home Internet Access
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class	2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
11 Personnel compensation				
11.1 Full-time permanent				
Senior executive service	$0	$0	$0	$0
General schedule	0	0	916	916
Students	0	0	0	0
Subtotal	0	0	916	916
11.3 Other than full-time permanent				
General schedule	0	0	0	0
Subtotal	0	0	0	0
11.5 Other personnel compensation				
Cash awards	0	0	0	0
Other	0	0	0	0
Subtotal	0	0	0	0
11.8 Special personnel services payments				
Other	0	0	0	0
Subtotal	0	0	0	0
11.9 Total personnel compensation	0	0	916	916
12.1 Civilian personnel benefits				
Civil service retirement	0	0	0	0
Federal employees' retirement	0	0	99	99
Thrift savings plan	0	0	18	18
Federal insurance contribution act - Medicare	0	0	54	54
Federal insurance contribution act - OASDI	0	0	13	13
Health insurance	0	0	52	52
Life insurance	0	0	2	2
Employees' compensation fund	0	0	0	0
Other	0	0	0	0
Subtotal	0	0	238	238

Department of Commerce
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Home Internet Access
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class		2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
13	Benefits for former personnel				
	Other	$0	$0	$0	$0
	Subtotal	0	0	0	0
21	Travel and transportation of persons				
	Common carrier	0	0	40	40
	Per diem/actual	0	0	42	42
	Other	0	0	0	0
	Subtotal	0	0	82	82
22	Transportation of things	0	0	2	2
23.1	Rental payments to GSA	0	0	204	204
23.2	Rental payments to others	0	0	0	0
23.3	Communications, utilities and miscellaneous charges				
	Rental of ADP equipment	0	0	0	0
	Rental of office copying equipment	0	0	0	0
	Federal telecommunications system	0	0	1	1
	Other telecommunications services	0	0	35	35
	Postal Service by USPS	0	0	6	6
	Other	0	0	0	0
	Subtotal	0	0	42	42
24	Printing and reproduction				
	Publications	0	0	0	0
	Other	0	0	75	75
	Subtotal	0	0	75	75

Department of Commerce
National Telecommunications ind Information Administration
Home Internet Access
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class	2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
25.1 Advisory and assistance services				
Management and professional support services	$0	$0	$400	$400
Studies, analyses, and evaluation	0	0	0	0
Engineering and technical services	0	0	0	0
Subtotal	0	0	400	400
25.2 Other services				
Training				
University	0	0	0	0
Other	0	0	0	0
Other non-government contracts	0	0	50	50
Other	0	0	925	925
Subtotal	0	0	975	975
25.3 Purchases of goods and services from Government accounts	0	0	808	808
Office of Personnel Management Training	0	0	0	0
GSA reimbursable services	0	0	0	0
ERR	0	0	0	0
Payments to GA, WCF	0	0	90	90
Subtotal	0	0	898	898
25.7 Operation and maintenance of equipment	0	0	25	25
26 Supplies and materials				
Office supplies	0	0	13	13
ADP supplies	0	0	15	15
Other	0	0	0	0
Subtotal	0	0	28	28

Department of Commerce
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Home Internet Access
DETAILED REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2001 Adjustments to Base	2001 Base	2001 Estimate	2001 Increase/ (Decrease)
31	Equipment				
	Office machines and equipment	$0	$0	$5	$5
	ADP hardware/software	0	0	110	110
	Other	0	0	0	0
	Subtotal	0	0	115	115
41	Grants, subsidies and contributions	0	0	46,000	46,000
99	TOTAL OBLIGATIONS	0	0	50,000	50,000

Department of Commerce
National Telecommunications and Information Administration
Home Internet Access
APPROPRIATIONS LANGUAGE AND CODE CITATIONS

For grants authorized by sections 391and 392 of the Communications Act of 1934, as amended, $50,000,000 to remain available until expended, of which not to exceed $4,000,000 shall be available for program administration and other support activities as authorized by section 391: *Provided,* That notwithstanding the requirements of sections 392(a) and 392(c) of the Act, these funds may be used to support activities to provide low-income individuals and families with access to the Internet in their homes.

47 U.S.C. § 391
47 U.S.C. § 392
47 U.S.C. § 902

47 U.S.C. § 391 authorizes the Secretary of Commerce to provide grant funds for the planning and construction of public telecommunications facilities by eligible entities.

47 U.S.C. § 392 sets forth the application requirements to be submitted to the Secretary of Commerce by eligible entities to request funds for the construction of public telecommunications facilities.

47 U.S.C. § 902(b)(3)(B) assigns to NTIA the administration of the Public Telecommunications Facilities Program.

Department of Commerce
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Home Internet Access
ADVISORY AND ASSISTANCE SERVICES
(Dollar amounts in thousands)

	1999 Actual	2000 Estimate	2001 Estimate
Management and Professional Support Services	$ 0	$ 0	$ 400
Studies, Analysis & Evaluations	0	0	0
Engineering & Technical Services	0	0	0
Total	$ 0	$ 0	$ 400

Management & Professional Support Services:

The Home Internet Access program will utilize consultants to review and evaluate grant applications.

Department of Commerce
National Telecommunications and Information Administration
Home Internet Access
PERIODICALS, PAMPHLETS AND AUDIOVISUAL PRODUCTS
(Dollar amounts in thousands)

	1998 Actual	1999 Actual	2000 Estimate	2001 Estimate
Periodicals	$ 0	$ 0	$ 0	$ 25
Pamphlets	0	0	0	35
Audiovisual Products	0	0	0	0
Total	$ 0	$ 0	$ 0	$ 60

The Home Internet Access program will utilize pamphlets to provide grant application guidelines and reporting requirements.

Department of Commerce
National Telecommunications and Information Administration
Home Internet Access
AVERAGE GRADE AND SALARIES

	1999 Actual	2000 Estimated	2001 Estimated
Direct:			
Average ES Salary	$0	$0	$0
Average GS Grade	0	0	12.6
Average GS Salary	$0	$0	$60,539